

We Connect the Systems that Power Education®

SIFWorks® ZIS™ Enterprise Administration Guide

Version 3.2



Edstructures
9815 S. Monroe St.,
Ste. 400
Sandy, UT 84070
1.877.790.1261

www.edstructures.com

*Copyright © 2009 Edustructures. All rights reserved.
This document is provided to Edustructures customers and partners and may not be
reproduced—in part or whole—in any form without the express written permission of
NCS Pearson, Inc. Information provided herein is subject to change without notice.
SIFWorks and Edustructures are registered trademarks of NCS Pearson, Inc.
SIF and Schools Interoperability Framework are registered trademarks of the Schools
Interoperability Framework Association.
All other trademarks mentioned herein are the property of their respective owners.*

Contents

| | |
|--|-----------|
| Part I | 7 |
| 1. About This Guide | 7 |
| Introduction | 7 |
| Intended Readers / Users | 7 |
| 2. Companion Documents | 7 |
| SIFWorks ZIS Installation Guide..... | 7 |
| SIFWorks ZIS Integration Guide..... | 7 |
| Part II | 8 |
| 3. Introduction to the SIF (Schools Interoperability Framework) | 8 |
| Data Objects and Agents..... | 9 |
| SIF Zone Functions | 10 |
| Creating a Unified Data System | 10 |
| 4. Summary: Elements of a SIF Zone | 11 |
| Software Application | 11 |
| SIF Data Object | 11 |
| SIF Agent | 11 |
| ZIS (Zone Integration Server) | 11 |
| 5. Introduction to the SIFWorks ZIS (Zone Integration Server) | 12 |
| Part III | 13 |
| 6. Getting Started | 13 |
| Supported Platforms | 13 |
| Requirements..... | 13 |
| Software Requirements | 13 |
| Hardware Requirements | 13 |
| Quick Start..... | 14 |
| Advanced Configuration Steps | 14 |
| Part IV | 15 |
| 7. Accessing the ZIS Console | 15 |
| Logging In | 15 |
| Logging Out..... | 17 |
| 8. The Console | 18 |
| The Parts of the Console..... | 18 |
| Navigation Pane..... | 19 |
| Content Pane..... | 20 |
| Part V | 21 |
| 9. Creating and Managing Zone Templates and Zones | 21 |
| Introduction | 21 |
| Zone Templates: Best Practice Recommendation | 21 |
| Options: Templates, Zones, and Agents..... | 22 |
| Log Options—Descriptions and Use | 22 |
| Messaging Options—Descriptions and Use | 23 |

| | |
|---|-----------|
| Push Options—Descriptions and Use | 24 |
| Compatibility Options—Descriptions and Use | 24 |
| Changing the General Settings for the Default Zone Template | 25 |
| Changing Agent Settings Later | 26 |
| Creating Zone Templates | 27 |
| Adding Agents to a Template | 28 |
| Removing Agent(s) from a Template | 30 |
| 10. Creating and Managing Zones and Zone Groups | 32 |
| Creating Zones | 32 |
| Zone Creation Checklist | 32 |
| Creating Zone Groups | 34 |
| Moving Zones and Groups | 36 |
| Exporting Zones | 36 |
| Deleting Zones and Zone Groups | 37 |
| Working with Agents in a Zone | 38 |
| Queue | 38 |
| Logging Modules | 39 |
| Access Control | 41 |
| Provisioning | 43 |
| Messaging | 44 |
| Controls | 45 |
| Agent Settings | 46 |
| Part VI | 47 |
| 11. ZIS Console Settings | 47 |
| Console | 47 |
| Certificates | 48 |
| 12. Transports Settings | 51 |
| About Transports | 51 |
| Transports and Zone URLs | 51 |
| Selecting Transports: Best Practice Recommendation | 52 |
| Transport Parameters | 52 |
| To Create a Server Certificate | 53 |
| Creating a Transport | 54 |
| Activating and Deactivating Transports | 56 |
| Removing Transports | 58 |
| 13. Software Updates | 59 |
| Software Update Wizard | 59 |
| 14. Logging | 60 |
| Reviewing an Agent Log | 62 |
| Reviewing a Zone Log | 62 |
| Using the Log Information | 64 |
| Request and Response | 64 |
| Event Reporting and Subscription | 65 |
| Registration | 65 |
| 15. External Message Queuing | 66 |
| Configuring Database Queuing | 66 |
| Part VII | 68 |
| 16. Users and Groups Overview | 68 |
| Best Practice Recommendation | 68 |
| Security Groups | 68 |

| | |
|--|------------|
| Permissions | 70 |
| Setup | 72 |
| 17. Creating and Managing User and Group Accounts | 77 |
| Creating a User..... | 77 |
| Changing a User's Profile..... | 79 |
| Creating a Security Group | 80 |
| Part VIII | 82 |
| 18. Introduction to Rule Sets and Workflows | 82 |
| Rules and Rule Sets | 82 |
| Workflows | 82 |
| Rule Set Importing/Exporting..... | 83 |
| SIFWorks ZIS Rule Set Editor | 83 |
| Basic Rule Sets | 84 |
| Conditions | 84 |
| Actions | 84 |
| 19. Workflows | 85 |
| SIFWorks ZIS Workflow Editor..... | 85 |
| Enterprise Workflow..... | 85 |
| Zone Template Workflow | 85 |
| Zone Workflow | 85 |
| Part IX | 86 |
| 20. SIF Message Version Translation | 86 |
| Configuration | 87 |
| Customization | 88 |
| Part X | 89 |
| 21. Mail Server Settings | 89 |
| 22. Dashboard and Notifications | 92 |
| Accessing the Dashboard..... | 92 |
| Reports | 94 |
| Generating and Saving the Default Dashboard Report | 95 |
| Generating and Saving a Definition | 96 |
| Notifications..... | 102 |
| Accessing the Notifications Page | 102 |
| Adding a Notification | 103 |
| Removing a Condition or Action from a Notification | 108 |
| Deleting a Notification | 108 |
| Moving a Notification in the List | 109 |
| Node Path Notification Condition..... | 109 |
| About the “Node Path Contains” Rule | 109 |
| Examples | 110 |
| 23. Maintaining the ZIS | 111 |
| Routine or Ongoing Tasks | 111 |
| Log Files | 111 |
| Agent Queues | 111 |
| Part XI | 112 |
| 24. Basic Troubleshooting | 112 |
| Basic Connectivity | 112 |
| Connection Problems..... | 112 |

| | |
|---------------------------------------|------------|
| Common Causes | 112 |
| Common Resolutions | 113 |
| Push Problems | 113 |
| Common Causes | 113 |
| Common Resolutions | 113 |
| No SIF Activity | 114 |
| Common Causes | 114 |
| Common Resolutions | 114 |
| Using Queues in Troubleshooting | 114 |
| Part XII | 115 |
| 25. Contact Information | 115 |
| Support for SIFWorks ZIS 3.2 | 115 |
| Telephone Support | 115 |
| On-Line Customer Support Center | 115 |
| Remote Access | 115 |
| On-Site Support Service | 115 |

Part I

ZIS REFERENCES

1. About This Guide

Introduction

The SIFWorks ZIS Administration Guide is intended to provide an introduction to the SIFWorks Zone Integration Server (ZIS), along with basic steps for its configuration and use. The guide is organized so that basic steps and operations are treated in the first sections of the document; advanced setup and configuration steps are provided in subsequent sections.

Intended Readers / Users

This guide's intended readers are IT professionals tasked with managing a school or district's SIF information system infrastructure—specifically, the Edustructures SIFWorks ZIS.

2. Companion Documents

SIFWorks ZIS Installation Guide

The SIFWorks ZIS Installation Guide provides detailed instructions for installing the SIFWorks ZIS and optionally configuring the ZIS to run as a service.

SIFWorks ZIS Integration Guide

The SIFWorks ZIS Integration Guide provides a detailed and technical treatment of Rule Sets (for filtering or transforming messages), Workflow (the application of Rule Sets to zones and agents in order to modify the ways in which the ZIS handles messages), and User Management.

Part II

INTRODUCTION TO SIF AND THE SIFWORKS ZIS

3. Introduction to the SIF (Schools Interoperability Framework)

The Schools Interoperability Framework (SIF) is an initiative driven by K-12 education technology providers and users to revolutionize the management and accessibility of data within schools and school districts. SIF enables diverse applications to interact and share data efficiently, reliably, and securely, regardless of the platform hosting the applications. There are now over 550 SIF members, including application and technology providers as well as school districts and states.

The software engineers and educators who developed the SIF process and initial specifications were drawn from companies and districts large and small, from all across the K-12 landscape. While each had a vested interest in preserving the systems they helped create, they also realized that enabling software programs to "talk" to each other and share data was important enough that they needed to overcome their own company-centric view of the problem. They needed to develop a solution that was flexible, scalable, reliable, secure and affordable, for both schools and vendors.

Their solution meets all of these needs with remarkable grace. The SIF Specification views a school or district as a single system of data in which the software applications make up the component parts. This logical grouping of software applications is called the SIF Zone.

At the center of this Zone is a software application called a Zone Integration Server (ZIS). The SIFWorks ZIS from Edustructures is the market and technology leader, able to scale from small schools to statewide implementations.

The ZIS serves as the "central nervous system" of the Zone by tying together all of the applications, facilitating their communication and regulating their activities (see the figure below, *SIF Zone*). The school or district technical administrator determines the manner in which a ZIS structures the Zone, including all security and authentication parameters.

SIF Zone



Data Objects and Agents

The answer to the problem of sharing data among disparate applications was twofold: the Data Object and the Agent. A Data Object is a standard definition of some piece of school system information. For example, a student's name, address, and phone number are part of the "StudentPersonal" Data Object. By having different software programs understand this common definition of a student, it is possible for them to share this information properly. The SIF Specification currently defines at least 120 Data Objects, with more to be defined as the Specification evolves. By agreeing on these definitions, SIF makes it possible for software programs built on different platforms and with different database designs to share data.

Moving and processing these Data Objects is the job of the Agent. (In the figure *Zone Centered on Zone Integration Server* shown above, Agents are indicated by circles containing the letter A.) The list of things an Agent is required to do is documented in the SIF Specification. Because this functionality is specified in a standard format, software vendors have some choice about how this Agent functionality is added to their software applications. Some vendors have chosen to make the Agent functionality built into their application, while others have chosen to have the Agent run as a separate module or service. Regardless of how it is implemented, all Agents produce the same results, because the rules for Agent behavior are specified and agreed upon.

SIF Zone Functions

A SIF Zone uses a "publish and subscribe" model, which is similar to how you get a magazine delivered to your home. Unless you register with the magazine, you will not receive it. (We'll leave junk mail out for the moment). Once you have registered with the magazine ("subscribed"), you receive a copy whenever it is published.

Agents do the same thing in a SIF Zone. Once a ZIS is set up, each SIF-enabled software application registers with the ZIS so that it can communicate with the SIF Zone. An Application can then act as a provider for and/or a subscriber to various Data Objects. In a basic example, a Student Information System (SIS) might act as the provider of the StudentPersonal Data Object, and a Library or Food Service Application would subscribe to events for that object. Since each of these applications is part of the Zone, whenever there is a change to student information in the SIS system, the SIS would publish an Event that is relayed by the ZIS to all subscribers. This lets them know that a change has taken place.

All of this notification happens instantly and automatically. As a result, as soon as a new student is added to the school, or someone's phone number is updated, that information is automatically transferred to all of the subscribing systems and updated almost instantly. The Zone structure means this information is distributed to as many systems as are authorized to receive it, eliminating redundant data entry.

Creating a Unified Data System

SIF "works" when a software application sends out a message, through its Agent, to a ZIS zone. The ZIS forwards that information to the requesting application through the receiving application's Agent. SIF-enabled software applications and Agents don't talk to each other directly; each application talks to its Agent, which talks to the ZIS, which handles all further communication. In fact, the first application has no knowledge that the other application exists or may need the data; the ZIS handles all of that. The ZIS' role as a "third-party message handler" means that the SIF framework is easily expandable, very reliable, and relatively straightforward, making it easy for software companies to write Agents for SIF.

As you can see, creating a unified system to move data has tremendous advantages for school management. By moving data quickly and accurately, costly and redundant data entry is eliminated, freeing staff to focus on delivering services directly to students. In addition, because all of the data is based on the same source, changes are distributed quickly. This guarantees that everyone has access to the most current and accurate data.

However, creating a unified system for school data management also requires that the school or district understand, before implementing SIF, what data is currently collected, and decide how this data is to be shared. Agreement within a school or district about data ownership and clarity regarding which offices or individuals are responsible for adding or updating data are important to reap the full benefits of a SIF infrastructure. A systematic approach to data management, built around SIF-enabled applications, lets schools redirect resources and staff from data entry to child-centered education.

4. Summary: Elements of a SIF Zone

There are four elements that make up a SIF Zone. The logical grouping of software applications that allow SIF to work are:

Software Application

A software program implemented within a school or district. For example, student information systems, library automation programs, and food service management software are all software applications.

SIF Data Object

Sets of information shared by software applications using the rules of the SIF Specification. The contents of Data Objects are defined by the SIF Specification. Data Objects are shared through SIF messages and written using standard XML notation.

SIF Agent

A software program, written by a vendor, that serves as the intermediary between the software application and the SIF Zone.

An Agent can publish messages when events occur in its application, react to incoming events, and request data and process responses from other applications. The Agent publishes and receives messages through the Zone Integration Server (ZIS).

ZIS (Zone Integration Server)

A software program that serves as the central communications point in a SIF Zone. The ZIS keeps track of all the agents registered in the Zone and manages all transactions between and among Agents, enabling Agents to provide data, subscribe to events, publish events, request data, and respond to requests.

The ZIS is also responsible for all access control, security, and routing within the Zone. The SIFWorks ZIS is the premier Zone Integration Server.

5. Introduction to the SIFWorks ZIS (Zone Integration Server)

The SIFWorks ZIS was designed from the ground up to be the most advanced SIF integration platform available, and also the easiest to implement. Written 100% in Java, SIFWorks ZIS runs on a variety of operating systems, including Microsoft Windows, Mac OS X, Linux, and Solaris. Any operating system that has Java 1.5 or later can run SIFWorks ZIS. SIFWorks ZIS is a self-contained package; it does not require any additional messaging or database software, which saves on both total cost of ownership and time to implement.

The SIF specification has evolved over the past several years, and some agents comply with various versions of the specification. SIFWorks ZIS delivers full support for all versions of SIF, from SIF 1.0r1 to the most current release.

Part III

GETTING STARTED

6. Getting Started

The following are basic system requirements for installing the SIFWorks ZIS, and general steps for its use. (Detailed installation instructions are found in the SIFWorks ZIS Installation Guide.)

Supported Platforms

- Microsoft Windows Server 2008
- Microsoft Windows Server 2003
- Microsoft Windows 2000
- Microsoft Windows XP
- Apple Mac OS X
- Linux
- Solaris

Requirements

Software Requirements

Java 2 Standard Edition 5.0 (J2SE 5.0) or later. Java is included with many operating systems and is also available free of charge from the Sun Microsystems website:

<http://java.sun.com>

Internet Explorer 6+, Firefox, or Safari web browser. (A web browser is required to use the web-based SIFWorks ZIS Administration console.)

Hardware Requirements

- Pentium III-class server
- Minimum 256 MB memory
- Minimum 10 MB available disk space (50 MB per zone is recommended)

Additional hardware and software requirements may be imposed by the Java Runtime Environment for the specific operating system you're using.

Quick Start

1. Install SIFWorks ZIS. (See Installation Guide.)
2. Start SIFWorks ZIS.
3. Open the Administration Console.
4. Define Default Zone Template.
5. Create Zones.
6. Modify Agent and Zone settings.
7. Connect Agents.

Advanced Configuration Steps

1. Choose server settings.
 - a. Console
 - b. Transports
 - c. Security certificates
 - d. Logging Settings
2. Establish user accounts and groups.
3. Create Enterprise Rule Sets for use in Workflow Editor.
4. Choose Default Zone Template Settings.

Part IV

THE CONSOLE

7. Accessing the ZIS Console

Logging In

To start a session with SIFWorks ZIS, use a web browser to go to the login page, and then enter your SIFWorks ZIS user name and password.

If the secure console is enabled, the URL is: <https://localhost:7003/>

(In place of localhost, you can substitute the IP address of the machine running the SIFWorks ZIS.)

The SIFWorks ZIS login screen looks like the image below.



Procedures in this document assume you have previously logged into SIFWorks ZIS.

1. Type "sifworks" (the default administrator user name) in the User Name field.
2. Type the account password into the Password field. After logging in, you see the basic SIFWorks ZIS console at the "Enterprise Summary" page, shown below.

SIFWorks ZIS

SIFWorks ZIS Enterprise Edition

[Enterprises](#) • [Server Log](#) • [Environment](#)

Enterprises

The following enterprise is managed by this SIFWorks® Zone Integration Server. Click on the enterprise name to manage it.

| Enterprise Name | Host | Zones | Version |
|-------------------------------|---------------|-------|----------|
| My Enterprise | 10.40.174.165 | 4 | 3.0.0.38 |

SIFWorks ZIS License

Product: SIFWorks ZIS Enterprise Edition
Licensed To: Research and Development
Notice: For Developer Use Only
Serial #: 039F418770AD46048C3893FB5A20BF6F
Subscription: 01/01/1972 - 01/01/2072
Support Provider:

- The SIFWorks ZIS console consists of two panes: a navigation pane on the left, and a content pane on the right.
- The SIFWorks ZIS console consists of two panes: a navigation pane on the left, and a content pane on the right.
- In the navigation pane in the left pane, click the (+) buttons to “expand” the navigation pane, or the (-) buttons to collapse it. The following image shows the expanded navigation pane.

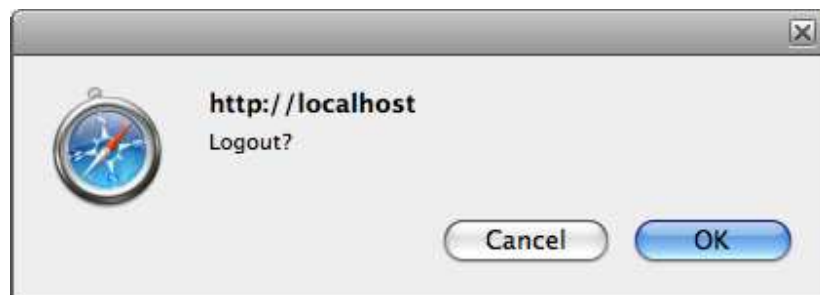


Logging Out



To log out of the SIFWorks ZIS Console:

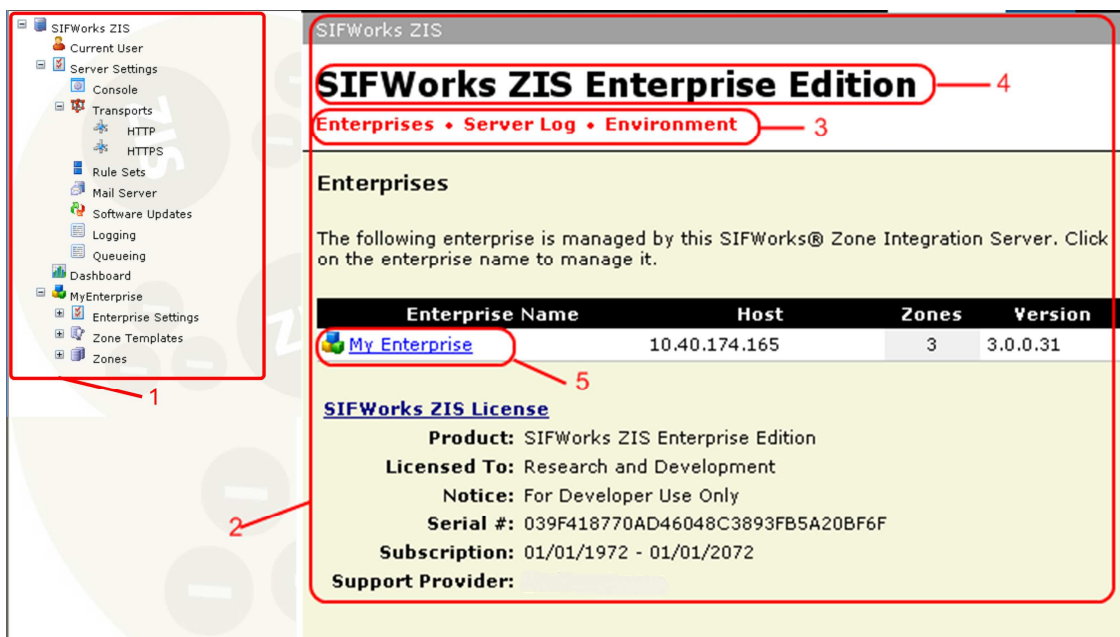
1. Click **Logout** (found in the upper right corner of the SIFWorks ZIS Console).
2. A confirmation dialog is displayed:



3. Click **OK** to Logout, or click **Cancel** to stop the operation and return to the Console.

8. The Console

The SIFWorks ZIS Console is divided into two panes; the left pane displays the Navigation Pane, and the right pane displays the Content Page.

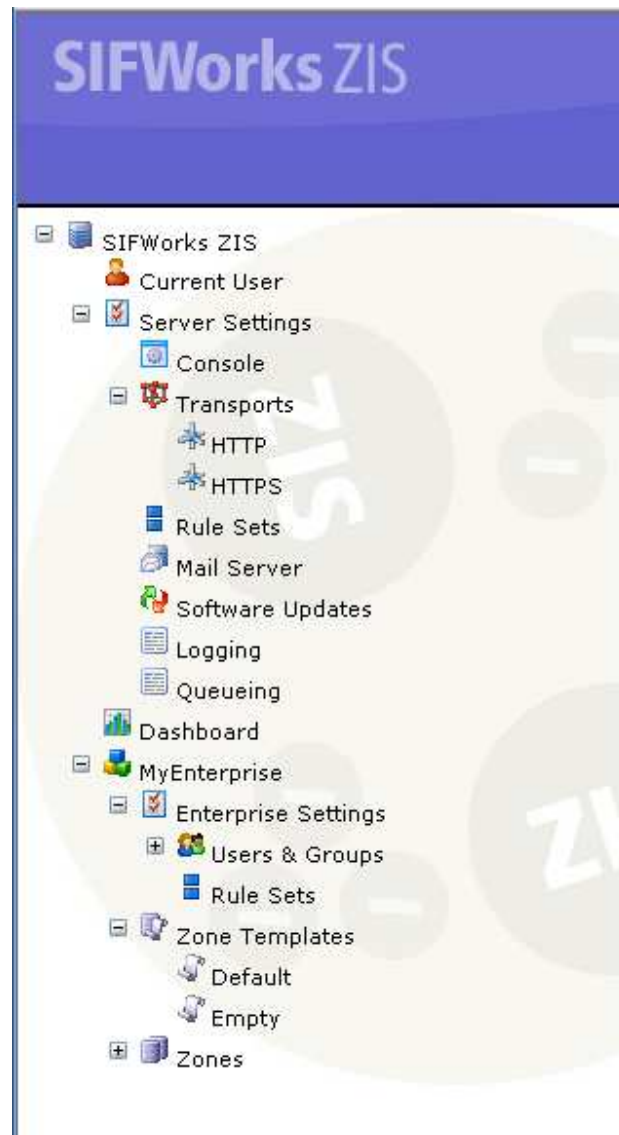


The Parts of the Console

1. Navigation Pane (left pane of the Console).
2. Content Page (right pane of the Console). All content pages are fairly similar, and provide access to settings and content pages.
3. Tabs (Links to related pages and forms). Links will replace the current content with a related page, typically a form to edit existing settings. Forms will have a Save button, and changes will not take effect until the save button is clicked.
4. Content Page Title.
5. Links (to related pages and forms; i.e., Enterprise, Zones, Templates, and Agents).

NOTE: Most initial setup of a SIFWorks ZIS server is done through items under Server Settings in the Navigation Pane (e.g., Console, Transports and so on). After initial setup, most work is done in specific zones under the Zones title.

Navigation Pane



Selecting an item from the navigation pane will generate a corresponding content page in the right pane of the Console. To expand branches of the navigation pane, click (+); to collapse the pane, click (-).

Content Pane


SIFWorks ZIS

SIFWorks ZIS Enterprise Edition

Enterprises • Server Log • Environment

Enterprises

The following enterprise is managed by this SIFWorks® Zone Integration Server. Click on the enterprise name to manage it.

| Enterprise Name | Host | Zones | Version |
|---|---------------|-------|----------|
|  My Enterprise | 10.40.174.165 | 4 | 3.0.0.38 |

SIFWorks ZIS License
Product: SIFWorks ZIS Enterprise Edition
Licensed To: Research and Development
Notice: For Developer Use Only
Serial #: 039F418770AD46048C3893FB5A20BF6F
Subscription: 01/01/1972 - 01/01/2072
Support Provider:

The right pane of the ZIS Console displays content pages that correspond with the options in the navigation pane. For example, clicking **Zones** in the Navigation Pane will display the Zones Summary page in the content pane.

Part V

CREATING AND MANAGING ZONE TEMPLATES AND ZONES

9. Creating and Managing Zone Templates and Zones

The Zone Template is an effective tool to deploy and manage Zones on the SIFWorks ZIS.

Introduction

SIFWorks ZIS lets you create one or more template Zones. When you use zone templates, zones are created with identical base configurations and are ready for customization, if necessary. A zone template is a collection of agents and settings that are automatically applied to new zones you create. When a change is made to a zone template, all zones based on that template inherit the changes. In a district with many schools, this saves time and ensures consistency.

SIFWorks ZIS is pre-configured with a Default zone template that can be customized with the agents you expect to register in each zone. You can also create your own Zone Templates, one for each different type of zone you will require in your enterprise. For example, you might create a template for “Third-Party Agents” if you plan to establish zones for service agencies and state departments to connect to. Or, you could create a “High School Applications” template for the zones that model your district’s high schools.

Zone Templates: Best Practice Recommendation

Edustructures recommends that you start out by adding the common set of SIF Agents used in your district to the Default zone template, rather than adding agents directly to each zone. If you decide to create a “district zone” for your enterprise in addition to individual school zones, consider creating a template for the district zone. You can then adjust the district zone template separately from the default zone template.

Options: Templates, Zones, and Agents

Four sets of options define the interaction of SIFWorks ZIS with SIF Agents. **Log**, **Messaging**, and **Pull** options can be set at the Zone Template, Zone, and Agent level; the **Compatibility** options are defined only for individual Agents.

Navigating and setting the Options is the same regardless of whether you are setting them in the Agent, or in the Agent template.

| Log Options | | | |
|-----------------------|-----------------------|-----------------------|--------------------------------------|
| | On | Off | Zone Default |
| Log Incoming Activity | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Log Outgoing Activity | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Log Acknowledgements | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Log Pull Requests | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> Off |
| Log Transport Detail | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |

| Messaging Options | | | |
|--------------------------------|-----------------------|-----------------------|--------------------------------------|
| | On | Off | Zone Default |
| Validate XML | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> Off |
| Allow Pull Mode | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Can Request SIF_ZoneStatus | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> Off |
| Require HTTPS for all messages | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> Off |

Push Options

☒ Use Template Defaults

Retry: seconds on first push failure (Default: 10)

Retry: seconds after threshold period has elapsed (Default: 300)

Threshold: seconds (Default: 300)

| Compatibility Options | | | |
|---|-----------------------|-----------------------|-------------------------------------|
| | On | Off | Default |
| Use SIF_OriginalMsgId when processing Pull Acknowledgements | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Retry message when acknowledged with a Transport Error | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Allow self-addressed events to enter the queue | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Response Validation | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |

Log Options—Descriptions and Use

Zone Settings are inherited from the template:

| Log Options | | | |
|-----------------------|-----------------------|-----------------------|--------------------------------------|
| | On | Off | Template Default |
| Log Incoming Activity | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Log Outgoing Activity | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Log Acknowledgements | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Log Pull Requests | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> Off |
| Log Transport Detail | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |

Log Incoming Activity: As the name suggests, this setting allows the ZIS to log incoming activities. Unless you select to turn it off, it is on by default.

Log Outgoing Activity: This setting allows the ZIS to log outgoing activities. Unless you turn it off, this setting, too, is on by default.

Log Acknowledgements: This setting enables the logging of the corresponding SIF_Ack packet for each messaging transaction. This setting is on by default.

Log Pull Requests: When enabled, the ZIS will log all pull requests from agents regardless of whether they result in retrieving a message. This setting is off by default.

Log Transport Detail: This setting records information such as when connections are made and lost or the IP from which the connection originated. The default setting is on.

Messaging Options—Descriptions and Use

| Messaging Options | | | |
|--------------------------------|-----------------------|-----------------------|--------------------------------------|
| | On | Off | Template Default |
| Validate XML | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> Off |
| Allow Pull Mode | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Can Request SIF_ZoneStatus | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> Off |
| Require HTTPS for all messages | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> Off |

Validate XML: While enabled, all messages received are scrutinized to ensure that they are well-formed and valid according to the appropriate XML Schema or DTD. Overall performance may be adversely affected. It is recommended that this option be used only during testing. This setting is off by default.

Allow Pull Mode: This allows agents to operate in pull mode. Disabling this setting restricts the agents to push mode. This setting is on by default.

Can Request SIF_ZoneStatus: When this option is enabled, agents are not permitted to make a SIF_Request for SIF_ZoneStatus objects. The object will still be available via SIF_SystemControl messages. Disabling this option is uncommon. This setting is on by default.

Require HTTPS for all messages: When this setting is turned on, all incoming activities must come from an HTTPS transport. This overrides the requirements specified by the agents themselves. This setting is off by default.

Perform SIF Version Translation: When this setting is turned on, all SIF_Request, SIF_Response and SIF_Event messages that are inbound from or outbound to the agent will be translated to the highest SIF version that the agent is capable of understanding. See *Part IX: SIF Message Version Translation* for details.

Push Options—Descriptions and Use

► **Push Options**

☒ Use Template Defaults

Retry: seconds on first push failure (Default: 10)

Retry: seconds after threshold period has elapsed (Default: 300)

Threshold: seconds (Default: 300)

► **Compatibility Options**

Retry: ___ seconds on first push failure: The agent will retry the outgoing activity in the specified number of seconds after each failure. It will continue trying at that specified interval until it reaches the Threshold.

Retry: ___ seconds after threshold period has elapsed: After passing the Threshold, the agent will switch to retrying in this specified number of seconds.

Threshold: ___ seconds: After the number of seconds specified here, the agent will switch from the first retry to the second retry.

Compatibility Options—Descriptions and Use

| | On | Off | Default |
|---|-----------------------|-----------------------|-------------------------------------|
| Use SIF_OriginalMsgId when processing Pull Acknowledgements | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Retry message when acknowledged with a Transport Error | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Allow self-addressed events to enter the queue | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |
| Response Validation | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On |

Use SIF_OriginalMsgId when processing Pull Acknowledgements: This setting defaults to on because SIF_OriginalMsgId is the identification the agent should use. However, this option is one tool at the administrator's command when the ZIS has to deal with a broken agent. Sometimes agents use acknowledgement (SIF_Ack) packet identification, instead. Turning this option off allows the ZIS to remember the acknowledgement packet identification so that the message can be identified.

Retry message when acknowledged with a Transport Error: This setting allows the ZIS to retry messages when the message is acknowledged with a Transport Error. The setting's default is on.

Allow self-addressed events to enter the queue: An agent is allowed to subscribe to events and then broadcast those same events resulting in sending itself an event. Some agents fail to process events properly when they generated that event. Disabling this compatibility option will prevent the events from entering the agent's queue if that agent sent the event originally. This setting is on by default.

Response Validation: Quality of service setting that ensures SIF Responses have a corresponding SIF Request, the appropriate SIF version, and correct data buffer size.

Changing the General Settings for the Default Zone Template

1. In the navigation pane in the left pane, click My Enterprise > Zone Templates. The Zone Templates page is displayed.

SIFWorks ZIS > My Enterprise

My Enterprise

Zone Templates

Zone Templates define the agents and settings common to a group of zones. When creating more than a few zones, define the agents and settings in a Zone Template first and then customize each zone as needed. Changes can then be applied to all zones globally by changing the settings of the associated template.

| Name | Description | Used By |
|---|--|-------------------------|
| Default | The built-in default zone template for this server | 2 zones |
| <input type="radio"/> Empty | Built-in template with no agents | 0 zones |

Create Template...Delete

2. Click on the **Default** link. The Default Zone Template—Agents page is displayed. (In the screen capture below, the Default Zone Template has been configured with only one Agent, “DataGeneratorAgent.”)

SIFWorks ZIS > My Enterprise > Default

Default

Agents • Workflow • Settings

Zone Template - Agents

The agents listed below are automatically created in all zones that reference this template. When agents are added or removed here, each zone is updated accordingly. Agents in zones inherit their settings from the corresponding agent in this template. Click an agent to view or modify its settings.

| Agent ID | Name (Optional) |
|--|-----------------|
| <input type="radio"/> DataGeneratorAgent | |

Add Agent...Remove

3. Choose the Settings tab. The Settings options page is displayed.

SIFWorks ZIS > My Enterprise > Default

Default

[Agents](#) • [Workflow](#) • [Settings](#)

Zone Template - Settings

Name:

Description:

Template settings are default values for all zones that reference this template.

[Log Options](#)

[Messaging Options](#)

[Push Options](#)

[Compatibility Options](#)

4. If the Options sections are “collapsed,” as shown above, click on the links to expand the view of available options (Log Options, Messaging Options, and Push Options).
5. Set the options as required by your system.
6. The settings you choose here will serve as the defaults for all zones created from this template.

Changing Agent Settings Later

In the Default Zone Template’s Agents page, you can click the Agent ID of an Agent to change its options. The screens are very similar to the ones you used to set up the Agent initially in the Template.

Creating Zone Templates

Most administrators will simply choose to modify the existing Default Template and use that as the basis for all zones. This section tells you how to create a new Zone Template and populate it with Agents.

1. Start the ZIS; open the Console, and click on Zone Templates in the navigation pane. The Zone Templates page is displayed in the content pane.
2. Click the **Create Template** button in the Zone Templates page. The Zone Template – Settings page is displayed in the content pane.

SIFWorks ZIS > My Enterprise

My Enterprise

Zone Template - Settings

Name:

Description:

Zone template settings are default values for all zones that reference this template.

[Log Options](#)

[Messaging Options](#)

[Push Options](#)

[Compatibility Options](#)

3. Type the unique identifier for this Template in the Name field ("District Template" in the screen capture above). Enter a description into the Description field; this field is required.
4. Click on the links to view and edit available settings options (Log Options, Messaging Options, Push Options and Compatibility Options). Set the options as required by your system. (The settings you choose here will serve as the defaults for all zones created from this template).
5. Click **Save**.
6. The new template is displayed in the Zone Templates page.

Adding Agents to a Template

1. Start the ZIS; open the Console, and click on Zone Templates in the navigation pane. The Zone Templates page is displayed in the content pane.

SIFWorks ZIS > My Enterprise

My Enterprise

Zone Templates

Zone Templates define the agents and settings common to a group of zones. When creating more than a few zones, define the agents and settings in a Zone Template first and then customize each zone as needed. Changes can then be applied to all zones globally by changing the settings of the associated template.

| Name | Description | Used By |
|---|--|------------------------|
| Default | The built-in default zone template for this server | 1 zone |
| <input type="radio"/> Empty | Built-in template with no agents | 0 zones |
| <input type="radio"/> District Template | test template | 0 zones |

Create Template...

Delete

2. In the navigation pane or the Zone Templates page, click on the template you wish to manage; the Zone Templates—Agent page is displayed in the content pane.

SIFWorks ZIS > My Enterprise > District Template

District Template

[Agents](#) • [Workflow](#) • [Settings](#)

Zone Template - Agents

The agents listed below are automatically created in all zones that reference this template. When agents are added or removed here, each zone is updated accordingly. Agents in zones inherit their settings from the corresponding agent in this template. Click an agent to view or modify its settings.

| Agent ID | Name (Optional) |
|--|-----------------|
| <input type="radio"/> DataGeneratorAgent | |

Add Agent...

Remove

3. Click the **Add Agent** button; the Add Agent page is displayed.

District Template

Add Agent

Agent ID:

Access Control:

Agent template settings are default values for all agents that reference this template.

[Log Options](#)

[Messaging Options](#)

[Push Options](#)

[Compatibility Options](#)

Save

Cancel

4. In the Agent ID field, type the unique identifier for the new agent.
5. Select an access control template from the Access Control popup menu. (If these lists are not quite right for the agent you are installing, select "Unrestricted." You will be able to change the Access Control later, after the Agent is saved into the Template.)
6. Click on the options links to view and edit available settings options (Log Options, Messaging Options, Push Options and Compatibility Options). Set the options as required by your system. (The settings you choose here will serve as the defaults for all zones created from this template).
7. Click **Save**; the content pane returns the Zone Template - Agents page, listing the new agent in the selected template.

At any time, you can click the name of a Zone Template in the Zone Templates list to view and change the information about the Template. In the Template's Agents list, you can click the Agent ID of an Agent to change its options, including setting custom Access Control Lists through the Access Controls link.

Note: An Agent ID cannot be edited, only created or deleted.

Removing Agent(s) from a Template

To remove an Agent from the Zone Template, click the radio button next to the Agent ID and then click Remove.

1. Start the ZIS; open the Console, and click on Zone Templates in the navigation pane. The Zone Templates page is displayed in the content pane.

SIFWorks ZIS > My Enterprise

My Enterprise

Zone Templates

Zone Templates define the agents and settings common to a group of zones. When creating more than a few zones, define the agents and settings in a Zone Template first and then customize each zone as needed. Changes can then be applied to all zones globally by changing the settings of the associated template.

| Name | Description | Used By |
|---|--|------------------------|
| Default | The built-in default zone template for this server | 1 zone |
| <input type="radio"/> Empty | Built-in template with no agents | 0 zones |
| <input type="radio"/> District Template | K-12 District | 0 zones |

[Create Template...](#) [Delete](#)

2. In the navigation pane or the Zone Templates page, click on the template you wish to manage; the Zone Templates—Agents page is displayed in the content pane.

SIFWorks ZIS > My Enterprise > District Template

District Template

[Agents](#) • [Workflow](#) • [Settings](#)

Zone Template - Agents

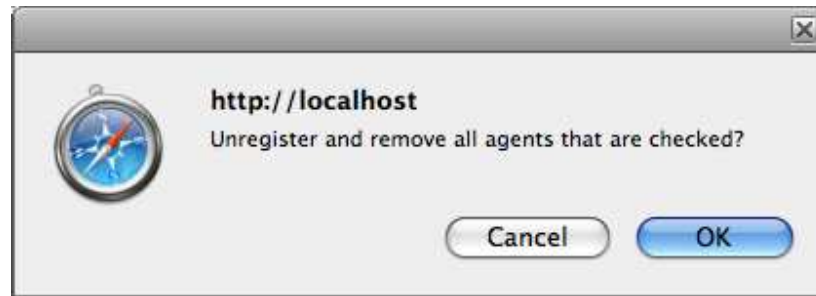
The agents listed below are automatically created in all zones that reference this template. When agents are added or removed here, each zone is updated accordingly. Agents in zones inherit their settings from the corresponding agent in this template. Click an agent to view or modify its settings.

| Agent ID | Name (Optional) |
|---|-----------------|
| <input checked="" type="radio"/> SIFQuery | |
| <input type="radio"/> DataGeneratorAgent | |

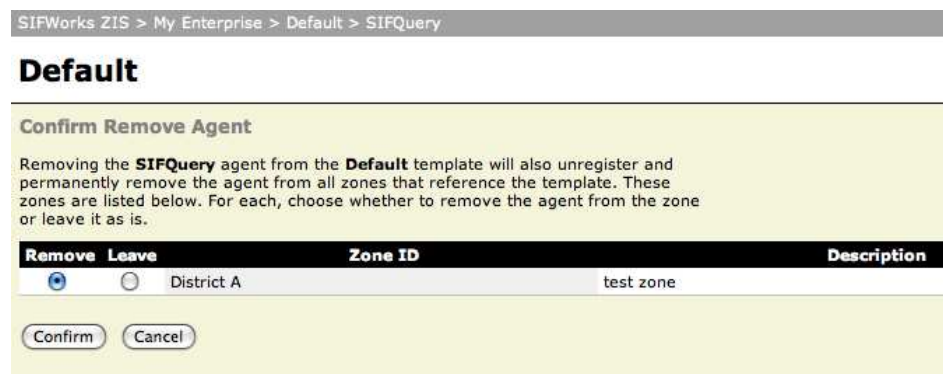
[Add Agent...](#) [Remove](#)

3. Select the Agent you wish to remove, and click the **Remove** button.

4. If you are removing an agent from any template other than the Default Zone Template, the following confirmation dialog is displayed. (If you are deleting an agent from the Default Zone Template, the selected agent is immediately deleted, without a warning or confirmation dialog.)



5. Click **OK** to remove the selected agent from the zone template, or click **Cancel** to stop the operation.
6. A confirmation dialog is displayed.



7. All zones that reference the Default Zone template are listed. For each zone, choose either the **Remove** or **Leave** radio button. **Remove** will delete the agent from the associated zone; **Leave** will allow the agent to stay in the associated zone, regardless of the agent's general removal from the Default Zone Template.
8. Click **Confirm** to accept the selection(s) and return to the Default Zone Template—Agents page.

10. Creating and Managing Zones and Zone Groups

Creating Zones

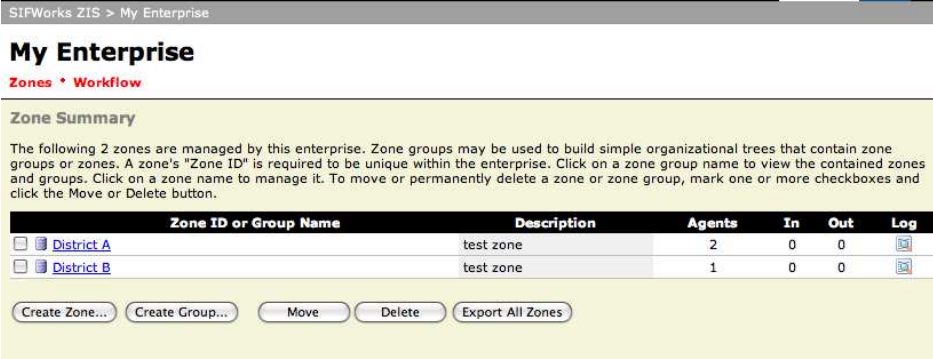
Zone Creation Checklist

The basic process for getting a zone up and running is as follows:

Define requirements: required Agents, Transports (HTTP or HTTPS), Logging, and other settings. If necessary, set up Agent certificates and (HTTPS) transports. If necessary, modify the Default zone template (or other template) to include the agents and settings you want to use in most of your zones.

Create a zone from the default template, adding any additional agents and setting specific options for the zone.

1. In the navigation pane in the left pane, click **Zones**. The content pane displays the Zone Summary page.



SIFWorks ZIS > My Enterprise

My Enterprise

Zones • Workflow

Zone Summary

The following 2 zones are managed by this enterprise. Zone groups may be used to build simple organizational trees that contain zone groups or zones. A zone's "Zone ID" is required to be unique within the enterprise. Click on a zone group name to view the contained zones and groups. Click on a zone name to manage it. To move or permanently delete a zone or zone group, mark one or more checkboxes and click the Move or Delete button.

| Zone ID or Group Name | Description | Agents | In | Out | Log |
|---|-------------|--------|----|-----|-----|
| <input type="checkbox"/> District A | test zone | 2 | 0 | 0 | |
| <input type="checkbox"/> District B | test zone | 1 | 0 | 0 | |

Create Zone... Create Group... Move Delete Export All Zones

2. Click **Create Zone**.
3. The **Zone Settings** page is displayed.

SIFWorks ZIS > My Enterprise

My Enterprise

Zone Settings

Zone ID:

Description:

Template:

4. Enter the Zone ID, and Description (optional); then choose a template for the Zone (Default or Empty.)

Zone ID: Used by agents to connect to the zone. SIFWorks ZIS identifiers are case- sensitive and may not contain any spaces or symbols. Zone IDs are restricted because they are used in the Zone URL when configuring an Agent. Choose a Zone ID that is unique, short, and identifies the school or entity the zone models—JEFFERSON_ES, WEST_HS, DISTRICT_ZONE, etc. You cannot change a zone’s identifier once the zone is created.

Description: Usually the name of the school represented by the zone.

Template: Determines the default settings and agents for the zone. You cannot change the template a zone is based on once the zone is created.

5. Click **Save**; the Zone Summary page is returned, listing the new zone.

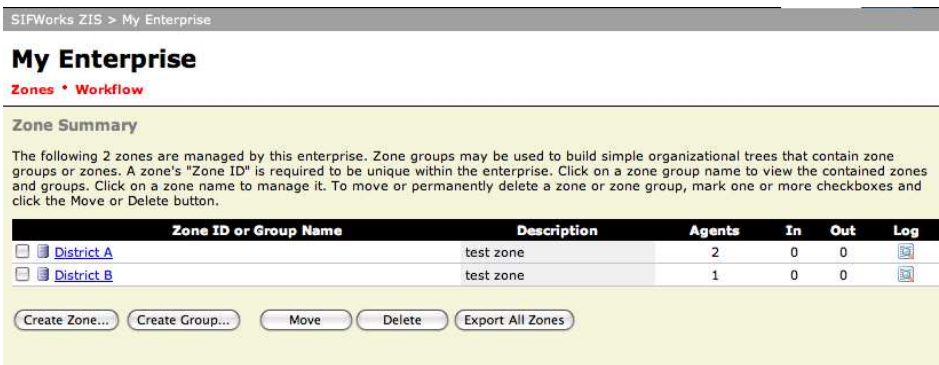
NOTE: At any time, you can click the Zone ID of a zone, in the Zone Summary list, to view and change the information about the zone. This allows you to review its operations, or even to customize it from the template.

Creating Zone Groups

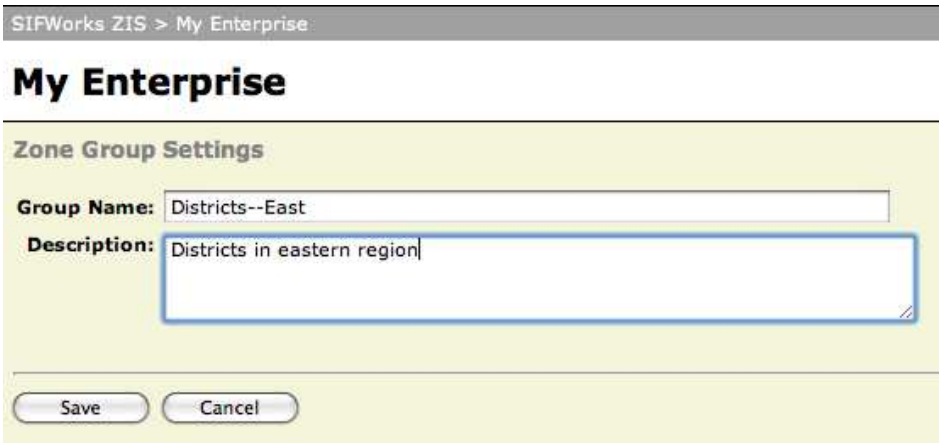
Zone Groups can be created to simplify the organization of the navigation pane; however, Zone management is still accomplished on a zone by zone (or agent by agent) basis.

To create a Zone Group:

1. Start the ZIS; open the Console.
2. Click **Zones** from the navigation pane. The Zones Summary page is displayed in the content pane.



3. Click **Create Group**. The Zone Group Settings page is displayed.



4. Enter the Group Name and Description.
5. Click **Save**. The content pane returns the Zones Summary page. (The new Zone Group is now listed on the Zones Summary page, and in the navigation pane.)

SIFWorks ZIS > My Enterprise

My Enterprise

Zones • Workflow

Zone Summary

The following 2 zones and 1 zone group are managed by this enterprise. Zone groups may be used to build simple organizational trees that contain zone groups or zones. A zone's "Zone ID" is required to be unique within the enterprise. Click on a zone group name to view the contained zones and groups. Click on a zone name to manage it. To move or permanently delete a zone or zone group, mark one or more checkboxes and click the Move or Delete button.

| Zone ID or Group Name | Description | Agents | In | Out | Log |
|--|-----------------------------|--------|----|-----|---------------------|
| <input type="checkbox"/> Districts--East (0 zones) | Districts in eastern region | | | | |
| <input type="checkbox"/> District A | test zone | 2 | 0 | 0 | Log |
| <input type="checkbox"/> District B | test zone | 1 | 0 | 0 | Log |

- Check the Zone(s) you would like to add to the New Zone Group, and click **Move**. The Move Zones and Groups page is displayed.

SIFWorks ZIS > My Enterprise

Zones

Move Zones And Groups

Select the desired destination group and click the Save button.

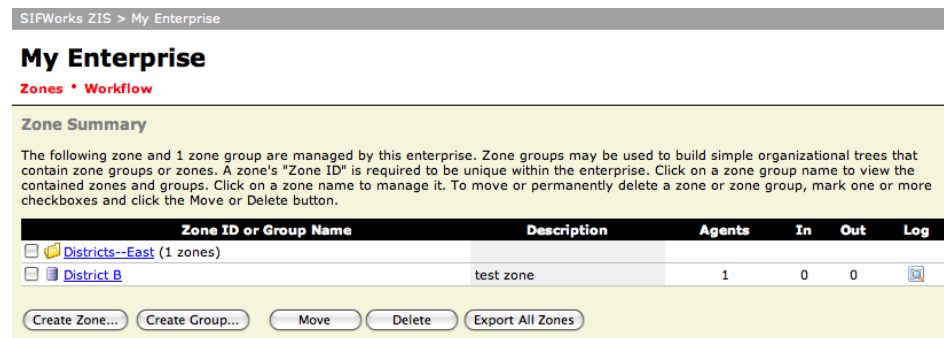
Move: District A

To: Zones

[Districts--East](#)

- The selected Zone ID is displayed beside “**Move**” in the upper pane of the Move Zones and Groups window. In the lower pane, or the “**To**” section, highlight the Zone Group where you want to move the selected Zone(s), and click **Save**.

8. The Zones Summary page is returned, and the selected Zone has been added to the new Zone Group. (The New Zone Group is displayed in the Zones Summary page and in the navigation pane; expanding a zone group in the navigation pane will display its associated zones).



Moving Zones and Groups

Zones and Zone Groups can be moved into or out of Zone Groups. There is always at least one Zone Group named “Zones” that appears in the navigation pane.

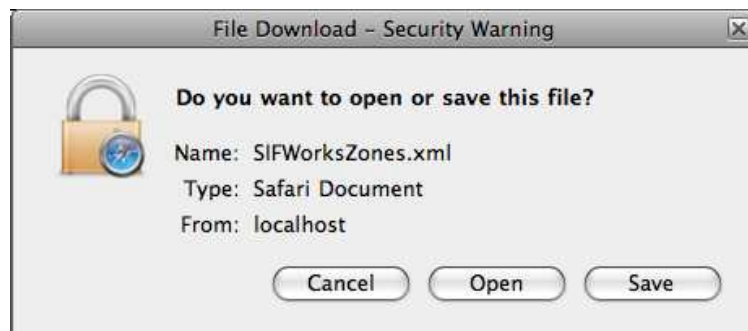
To move a Zone:

1. Click **Zones** from the navigation pane. The Zones Summary page is displayed in the content pane.
2. Check the Zone(s) you wish to move, and click **Move**.
3. The Move Zones and Groups page is displayed.
4. The name of the selected Zone is displayed; in the **To** box, highlight the destination for the selected Zone.
5. Click **Save** to accept the move.
6. The Zone is moved to the designated Group, and the Zone Summary page is updated.

Exporting Zones

A zone export file may be used to configure an Edustructures agent.

1. Click **Zones** from the navigation pane. The Zones Summary page is displayed in the content pane.
2. Zones are not exported individually; it is not necessary to select Zones or Zone Groups for export; all Zones are exported as a group.
3. Click **Export All Zones**. The File Download window is displayed.

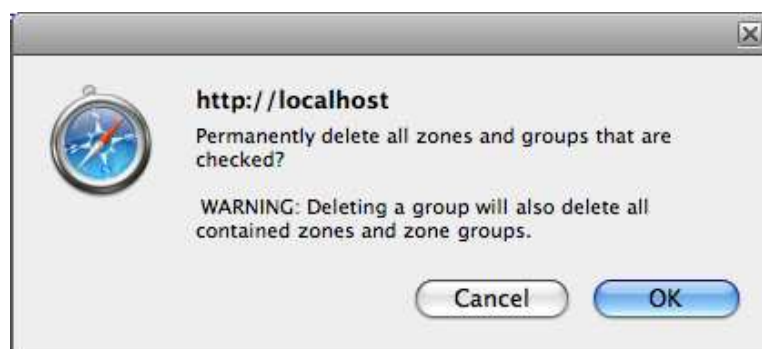


4. To view the export file, click **Open**; to save it, click **Save**; to stop the operation, click **Cancel**.

Deleting Zones and Zone Groups

To delete a Zone from the ZIS, click the check box next to the Zone ID and then click Delete. CAUTION: Be sure you want to remove the zone before doing this, as the action is immediate and permanent.

1. In the navigation pane in the left pane, click **My Enterprise** or **Zones**. The Zone Summary page is displayed.
2. Check the Zone(s) or Zone Group(s) you wish to delete, and click **Delete**.
3. A confirmation dialog is displayed.



4. Click **OK** to delete selected zone(s).
5. The selected Zone is deleted and the Zone Summary page is updated.

NOTE: Zone deletion is permanent; however you can use the **name** of a deleted Zone again when assigning a name to a new Zone.

Working with Agents in a Zone

1. In the navigation pane, choose **Zones**. The content pane displays the Zone Summary page.
2. Click the Zone ID link for the Zone you want to manage.
3. The Agent Summary for the Zone is displayed, as shown below.

SIFWorks ZIS > My Enterprise > District B

District B

[Agents](#) * [Provisioning](#) * [Zone Log](#) * [Workflow](#) * [Zone Settings](#)

Agent Summary

There are 2 agents in this zone. Click an agent to manage it.

| Agent ID | Name | Status | From | To | Queued | Log |
|------------------------------------|--------------------|----------------|------|----|-------------------|---------------------|
| DataGeneratorAgent | DataGeneratorAgent | Not Registered | 0 | 0 | 0 | Log |
| SIFQuery | SIFQuery | Not Registered | 0 | 0 | 0 | Log |

[Add Agent...](#) [Remove](#)

Zone URLs

Agents connect to this zone via any of these URLs:

- <https://10.40.174.165:7443/District B>
- <http://10.40.174.165:7080/District B>

4. Click the Agent ID of the Agent you wish to manage; the selected Agent's message queue is displayed.

SIFWorks ZIS > My Enterprise > District B > SIFQuery

SIFQuery

[Queue](#) * [Log](#) * [Access Control](#) * [Provisioning](#) * [Messaging](#) * [Controls](#) * [Agent Settings](#)

Message Queue

| ID | Source | Payload | Size | Timestamp |
|------------------------|--------|---------|------|-----------|
| - The queue is empty - | | | | |

5. The selected agent's setting page is displayed; the page has tabs for viewing or editing Agent properties.

The following are brief descriptions of properties shown in the tabs (Queue, Log, Access Control, Provisioning, Messaging, Controls, and Agent Settings).

Queue

Initially, the Agent settings page displays the selected agent's Queue information, as shown in the sample below. The Queue and Log are where you'll do most of your work after the system is up and running; usually, you won't need to change any other settings.

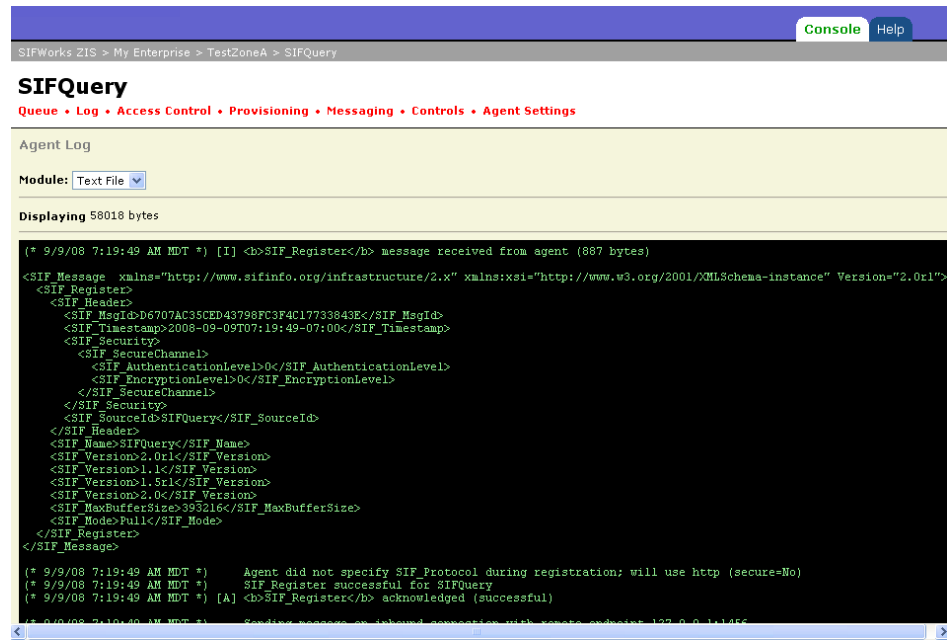
The Agent > Message Queue page will periodically refresh to show the current state of the queue; if there is no new activity within a short time, the message will be processed, and its ID will be removed from this view.

Logging Modules

The selected Agent's message requests and responses are recorded here. Logging modules are enabled in Server Settings.

Text File Logger

When this Logging module is selected, the messaging traffic is displayed in standard text format.



SIFWorks ZIS > My Enterprise > TestZoneA > SIFQuery

SIFQuery

Queue • Log • Access Control • Provisioning • Messaging • Controls • Agent Settings

Agent Log

Module: Text File

Displaying 58018 bytes

```
(* 9/9/08 7:19:49 AM MDT *) [I] <b>SIF_Register</b> message received from agent (887 bytes)
<SIF_Message xmlns="http://www.sifinfo.org/infrastructure/2.x" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" Version="2.0">
  <SIF_Register>
    <SIF_Header>
      <SIF_MsgId>D6707AC35CED43798FC3F4C17733843E</SIF_MsgId>
      <SIF_Timestamp>2008-09-09T07:19:49-07:00</SIF_Timestamp>
    </SIF_Header>
    <SIF_Security>
      <SIF_SecureChannel>
        <SIF_AuthenticationLevel>0</SIF_AuthenticationLevel>
        <SIF_EncryptionLevel>0</SIF_EncryptionLevel>
      </SIF_SecureChannel>
    </SIF_Security>
    <SIF_SourceId>SIFQuery</SIF_SourceId>
  </SIF_Register>
</SIF_Message>

(* 9/9/08 7:19:49 AM MDT *) Agent did not specify SIF_Protocol during registration; will use http (secure=No)
(* 9/9/08 7:19:49 AM MDT *) SIF_Register successful for SIFQuery
(* 9/9/08 7:19:49 AM MDT *) [A] <b>SIF_Register</b> acknowledged (successful)
(* 9/9/08 7:19:49 AM MDT *) Sending message on inbound connection with remote endpoint 127.0.0.1:1455
```

Database File Logger

The following is a display of the Agent Log when **Database File Logger** module is selected. Note that the log / display can be filtered according to Activity, Alerts, Errors, Warnings, Info, and Debug details.

SIFWorks ZIS > My Enterprise > TestZoneA > SIFQuery

SIFQuery

Queue * Log * Access Control * Provisioning * Messaging * Controls * Agent Settings

Agent Log

Module: **Logging+Alerts Database**

Show: ☒ Activity ☒ Alerts ☒ Errors ☐ Warnings ☐ Info ☐ Debug Options...

| # | Category | Title | MsgId | Timestamp |
|--|------------|---|-----------------------------------|---------------------|
| 39 log entries for last 30 minute period | | | | |
| 273 | SIF_Ack | SIF_Ack message received from agent (805 bytes) | 95504640758E4D3EB194FD62737C6A17 | 10/9/08 10:12:00 AM |
| 269 | Outbound | SIF_Response returned to pull agent (120707 bytes) | 6C4AA95998747470DB7681FC6EDA9CDD8 | 10/9/08 10:12:00 AM |
| 265 | SIF_Ack | SIF_Ack message received from agent (805 bytes) | DDAE7C584FE54FB886BA141E41655754 | 10/9/08 10:12:00 AM |
| 256 | Outbound | SIF_Response returned to pull agent (391766 bytes) | F7AF4D0B7B9D41AF9144427BC50872EB | 10/9/08 10:12:00 AM |
| 197 | * Queued * | SIF_Response dispatched to this queue from DataGeneratorAgent (...) | 6C4AA95998747470DB7681FC6EDA9CDD8 | 10/9/08 10:11:00 AM |
| 191 | * Queued * | SIF_Response dispatched to this queue from DataGeneratorAgent (...) | F7AF4D0B7B9D41AF9144427BC50872EB | 10/9/08 10:11:00 AM |
| 175 | SIF_Ack | SIF_Request acknowledged (successful) | 8DB691AD06B84871B5C4E27EFAA5ABE6 | 10/9/08 10:11:00 AM |
| 174 | Inbound | SIF_Request message received from agent (869 bytes) | 8DB691AD06B84871B5C4E27EFAA5ABE6 | 10/9/08 10:11:00 AM |
| 39 log entries for last 30 minute period | | | | |

Database File Logger > Options

By clicking on the **Options** button in the Database File Logger module, you can choose from the following log viewing and management filters.

SIFWorks ZIS > My Enterprise > District B > SIFQuery

SIFQuery

Queue * Log * Access Control * Provisioning * Messaging * Controls * Agent Settings

Agent Log

View

- ☐ Show the SIF_MsgId column **Yes**
- ☐ Display entries logged in the past **30** **minutes**
- ☐ Entries per page: **500** (Range: 25-1000)
- ☐ Arrange entries in **ascending** order

Log Management

[Clear](#) all entries from this log container

Apply Cancel

Access Control

An Access Control List (ACL) defines the operations that the selected Agent can perform for each SIF data object type. Operations include **Provide**, **Subscribe**, **Request**, and **Respond** to SIF Messages; and **Add**, **Change**, or **Delete** SIF Events. The Customize button may be used to set an agent's ACL based on one of the pre-defined ACLs.

SIFWorks ZIS > My Enterprise > District B > SIFQuery

SIFQuery


Queue • Log • Access Control • Provisioning • Messaging • Controls • Agent Settings

Access Control

Access Control Lists define the operations that can be performed for each object type. Choose a predefined ACL or choose Custom to build your own access control policy. Click the Customize button to copy the permissions displayed below into your Custom ACL.

ACL:

| Object | Events | | | | | | |
|-----------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| | Pro | Sub | Req | Rsp | Add | Chg | Del |
| Assessment | | | | | | | |
| Assessment | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| AssessmentAdministration | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| AssessmentForm | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| AssessmentItem | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| AssessmentPackage | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| AssessmentRegistration | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| AssessmentSubTest | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| StudentResponseSet | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| StudentScoreSet | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Data Warehouse | Pro | Sub | Req | Rsp | Add | Chg | Del |
| AggregateCharacteristicInfo | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| AggregateStatisticFact | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| AggregateStatisticInfo | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Food Services | Pro | Sub | Req | Rsp | Add | Chg | Del |
| FoodserviceItem | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FoodserviceItemPortion | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FoodserviceItemSales | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FoodserviceItemUnit | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FoodserviceMealPrices | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FoodserviceMenuPlan | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FoodserviceMilkSales | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FoodservicePurchaseTransaction | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FoodserviceReimbursementRates | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FoodserviceSales | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FoodserviceStaffEnrollmentCount | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FoodserviceStaffMealCounts | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FoodserviceStudentEnrollmentCount | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

ACL: 

Agent Template ACL

Populates the Access Controls page with operations defined in the **Zone Templates > Default >(Selected Agent) >Access Control**.

Custom ACL

Allows enabling /disabling of operations on data objects and elements.

Fully Restricted

Blocks all operations on all data objects.

Unrestricted

Enables all operations on all data objects.

Pre-defined ACLs

Populates the Access Controls page with operations performed on data objects by common agents.

Provisioning

Provisioning is the registration of the Agent as a potential subscriber or provider (or both) of data objects.

SIFWorks ZIS > My Enterprise > District B > SIFQuery

SIFQuery

Queue • Log • Access Control • Provisioning • Messaging • Controls • Agent Settings

Agent Provisioning

Use the checkboxes to manually provision this agent, then click the "Save Changes" button.

[Agent Registration](#)

Registered: ☐

[Provide & Subscribe](#)

| Object | Subscriber (0) | Provider (0) |
|-----------------------------------|--------------------------|--------------------------|
| Assessment | | |
| Assessment | <input type="checkbox"/> | <input type="checkbox"/> |
| AssessmentAdministration | <input type="checkbox"/> | <input type="checkbox"/> |
| AssessmentForm | <input type="checkbox"/> | <input type="checkbox"/> |
| AssessmentItem | <input type="checkbox"/> | <input type="checkbox"/> |
| AssessmentPackage | <input type="checkbox"/> | <input type="checkbox"/> |
| AssessmentRegistration | <input type="checkbox"/> | <input type="checkbox"/> |
| AssessmentSubTest | <input type="checkbox"/> | <input type="checkbox"/> |
| StudentResponseSet | <input type="checkbox"/> | <input type="checkbox"/> |
| StudentScoreSet | <input type="checkbox"/> | <input type="checkbox"/> |
| Data Warehouse | | |
| AggregateCharacteristicInfo | <input type="checkbox"/> | <input type="checkbox"/> |
| AggregateStatisticFact | <input type="checkbox"/> | <input type="checkbox"/> |
| AggregateStatisticInfo | <input type="checkbox"/> | <input type="checkbox"/> |
| Food Services | | |
| FoodserviceItem | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodserviceItemPortion | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodserviceItemSales | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodserviceItemUnit | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodserviceMealPrices | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodserviceMenuPlan | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodserviceMilkSales | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodservicePurchaseTransaction | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodserviceReimbursementRates | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodserviceSales | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodserviceStaffEnrollmentCount | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodserviceStaffMealCounts | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodserviceStudentEnrollmentCount | <input type="checkbox"/> | <input type="checkbox"/> |
| FoodserviceStudentMealCounts | <input type="checkbox"/> | <input type="checkbox"/> |

Caution: Some agents require that the agent provision itself by using SIF Infrastructure messages. If you make changes here, these kinds of agents may exhibit unexpected behavior if the manual settings are different than what the agent expects (based on the agent's registration).

SIFWorks ZIS > My Enterprise > District B > SIFQuery

District B

Confirm Provisioning Changes

Please confirm the following provisioning changes to SIFQuery. **Caution:** Unregistering an agent permanently deletes all messages from its queue. Any messages pending delivery will be discarded.

Accept Cancel

Subscriber Changes

- Subscribe Assessment
- Subscribe AggregateStatisticFact
- Subscribe FoodserviceStaffMealCounts
- Subscribe FinancialAccount
- Subscribe FinancialAnnual

Provider Changes

- Provide AssessmentPackage
- Provide FoodserviceMenuPlan
- Provide FoodserviceMilkSales
- Provide FinAnnual
- Provide FinBudget

Messaging

Messaging filters determine how the ZIS will hold and release SIF messages for the selected Agent. Use the checkboxes to select the desired filters. Click **Save** to hold new messages in the agent's queue, or click **Save & Apply** to hold both new messages and existing messages.

SIFWorks ZIS > My Enterprise > District B > SIFQuery

SIFQuery

Queue • Log • Access Control • Provisioning • Messaging • Controls • Agent Settings

Messaging

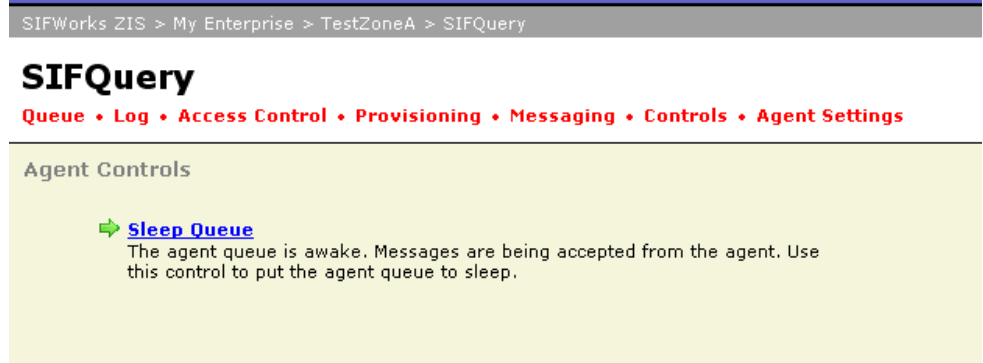
Use the checkboxes to select the desired filters and click "Save" to hold new messages in the agent's queue, or click "Save & Apply" to hold both new messages and existing messages.

Filters

- ☐ **Requests**
All SIF_Request type messages will be held until manually released.
- ☐ **Responses**
All SIF_Response type messages will be held until manually released.
- ☐ **Events**
All SIF_Event type messages will be held until manually released.

Save Save & Apply Cancel

Controls



Sleep Queue

The agent queue is “awake,” and accepting messages from the agent. Click **Sleep Queue** to put the agent queue to sleep.



Wakeup Queue

The agent queue is sleeping, and not accepting messages from the agent. Click **Wakeup Queue** to wake up the agent.

Agent Settings

Agent Settings are inherited from the agent template. For a detailed description of Agent Settings, refer to the section, “Options: Templates, Zones, and Agents.”

Part VI

SERVER SETTINGS

11. ZIS Console Settings

Console

Settings chosen here affect the behavior of the SIFWorks ZIS Administration Console as it administers transports and certificates.

To enable the "Secure" checkbox, create a console certificate. (After selecting "Secure" and restarting the ZIS, you must change the administration console URL to begin with "https.")

Note: After the ZIS restarts, the ZIS Administration Console URL entered into the web browser must begin with "https."

SIFWorks ZIS > My Enterprise

Console Settings
Console • Certificates

Console Settings

SIFWorks Console

Port: *

Auto Refresh: seconds (0 to disable)

Secure (HTTPS): ☐ *

Administration URL (Optional)

Type the hostname to use when agents request a URL to the administration console. By default, SIFWorks returns the IP address of this server (10.40.174.165). You can specify a different hostname or leave the field blank to use the default.

Host:

Default: 10.40.174.165

Note Changes to fields with an asterisk do not take effect until server is restarted.

Certificates

To create a Console Certificate:

- 1. In the navigation pane, choose Server Settings > Console. The Console Settings page is displayed in the content pane.

SIFWorks ZIS > My Enterprise

Console Settings

Console • Certificates

Console Settings

Console settings affect the behavior of the administraton console. Create a console certificate to enable the "Secure" checkbox. After selecting "Secure" console and restarting the ZIS, you must change the administraton console URL to begin with "https".

Administration Console

Port: 7003 *

Auto Refresh: 30 seconds (0 to disable)

Secure (HTTPS): ☐ *

Administration URL (Optional)

Type the hostname to use when agents request a URL to the administration console. By default, the SIFWorks ZIS returns the IP address of this server (10.40.174.165). You may specify a different hostname or leave the field blank to use the default.

Host:

Default: 10.40.174.165

Note Changes to fields with an asterisk do not take effect until server is restarted.

Save Cancel

- 2. Click the **Certificates** tab. The Console Certificates page is displayed.

SIFWorks ZIS > My Enterprise

Console Certificates

Console • Certificates

Console Certificates

Click an alias to view its details or click the icon to download the certificate.

| Alias | Certificate | Organizational Unit | Common Name | Expiration Date |
|-------|-------------|---------------------|-------------|-----------------|
|-------|-------------|---------------------|-------------|-----------------|

Create Delete

- 3. Click **Create**. The Create Console Certificate page is displayed.

Create Console Certificate

Create Private Key and Self-Signed Certificate

In the following form you will enter information to create a private key for SSL, along with a self-signed certificate for that key.

Mandatory Fields

Alias: *

Validity (Days): *

Suggested Fields

In order to achieve SIF_AuthenticationLevel 3, the Common Name field must be defined as the host name or IP address of the ZIS as agents will recognize it. If, for example, the ZIS resides behind a firewall, in most cases the IP or host name will be that of the firewall and not that of the actual server hosting the ZIS.

Common Name (CN):

Optional Fields

Organizational Unit (OU):

Organization (O):

Locality Name (L):

State Name (ST):

Country Code (C):

E-Mail Address (E):

Create

Cancel

4. Enter the necessary information to create a private key and self-signed certificate.
5. Click **Create** to accept the alias, name, and organizational information you have entered. The Server Certificates page is returned, and displays the name of the new certificate (alias) in the list.
6. You can click on the alias name to view certificate details; the Certificate Details page is displayed.



7. View the Certificate Details and Path, then click **Install** to start the Certificate Import Wizard; follow the Wizard instructions to trust and use the Certificate;

-or-

8. Click **Save** to open a standard Windows Save As window, navigate to the folder where you'd like to save the Certificate, and click **Save**.

12. Transports Settings

About Transports

A Transport defines the communications layer between the agents and the SIFWorks ZIS. The ZIS can communicate with agents using more than one type of transport protocol. Further, you can define multiple instances of each type in order to load balance network traffic.

Both HTTP (Hypertext Transport Protocol) and HTTPS (Hypertext Transport Protocol Secure) are supported. These are the same industry-standard protocols used by web browsers and secure e-commerce applications.

The HTTP transport is fast and does not require any special configuration, but it is insecure. All data transmitted over the network is sent in clear text format.

The HTTPS transport is slower than HTTP but offers a secure connection between agents and Zone Integration Servers. HTTPS connections are encrypted so that potential snoopers cannot read the data that's transmitted over the network. Optionally, HTTPS transports can also have authentication via client certificates. Authentication ensures that the Zone Integration Server is communicating with the agents you intend it to communicate with, at the specific address where the agent is installed. Authentication prevents third parties from registering an imposter agent with the ZIS.

Transports and Zone URLs

When configuring your SIF Agent software, you will be asked to enter a URL to the Zone Integration Server. The default transports determine the protocol and port numbers you can use. (Note that the HTTPS transport is not active by default, and requires additional configuration.)

| | | |
|-------|--|------|
| HTTP | <code>http://host:port/ZoneID</code> Example: http://192.168.1.66:7080/CLAYTON_MS | 7080 |
| HTTPS | <code>https://host:port/ZoneID</code> Example: https://frontgate:7443/NEWTON_HS | 7443 |

The *host* portion of the URL is the hostname or IP address where SIFWorks ZIS is installed. The *port* is the port number assigned to one of the Transports on which SIFWorks ZIS listens for incoming traffic. By default, SIFWorks ZIS is installed with a default Transport for HTTP and HTTPS, but you can create additional Transports as described later in this chapter. Finally, the *ZoneID* is the name of the zone the agent will connect to. Note the *ZoneId* is case-sensitive and must be entered exactly as it appears in the Zones view of the SIFWorks ZIS Console.

Selecting Transports: Best Practice Recommendation

Edustructures recommends that you use the HTTP transport when installing and configuring a zone for the first time. That is, set up your SIF Agent software to connect to the Zone Integration Server using the HTTP transport protocol and port.

By starting out with HTTP, you can avoid diagnosing HTTPS-specific issues and instead focus on making sure agents communicate with the Zone Integration Server and exchanging data as expected. Once you've verified that basic SIF communication is operational with HTTP, switch to secure HTTPS. This will require that you unregister each agent in a zone, modify the agent software's configuration to use the HTTPS protocol and port, and then re-register each agent. Note that some agents only support HTTPS while others support both transport protocols.

Transport Parameters

Transports are defined by a few simple parameters.

Server Port is the TCP/IP port on the server which the Transport will "listen on" for incoming data.

These should be numbers higher than 1024, and must be unique on the server (in other words, no other Transports, and no other programs on the same computer, can be set to "listen on" the same port).

Server Address can usually be left blank.

If your computer has more than one network card or IP address, you can bind the Transport to a specific IP address.

Limit to sets the number of concurrent connections.

Adjust upwards or downwards from the default as needed, considering the number of agents, amount of data, and capabilities of your server and network. If the number of concurrent connections is reached, SIFWorks ZIS will return a "server too busy" error message to agents.

The HTTPS transports have an additional parameter:

Require client authentication adds authentication to the existing encryption-based security of the HTTPS Transports.

When checked, this parameter indicates that each client will have to authenticate, or prove itself, to the server before messages are exchanged. Encryption always protects data over HTTPS Transports; authentication helps additionally by assuring that data only comes from agents which should be allowed to access this Transport.

To Create a Server Certificate

1. In the navigation pane, choose Server Settings > Transports > HTTPS. The HTTPS Transports Settings page is displayed in the content pane.
2. Click the **Server Certificates** tab. The Console Certificates page is displayed.

SIFWorks ZIS > My Enterprise

Server Certificates

Transports • **Server Certificates** • Agent Certificates

Server Certificates

Click an alias to view its details or click the icon to download the certificate.

| Alias | Certificate | Organizational Unit | Common Name | Expiration Date |
|-------|-------------|---------------------|-------------|-----------------|
|-------|-------------|---------------------|-------------|-----------------|

Create Delete

3. Click **Create**. The Create Server Certificate page is displayed.

SIFWorks ZIS > My Enterprise

Create Server Certificate

Create Private Key and Self-Signed Certificate

In the following form you will enter information to create a private key for SSL, along with a self-signed certificate for that key.

Mandatory Fields

Alias: *

Validity (Days): *

Suggested Fields

In order to achieve SIF_AuthenticationLevel 3, the Common Name field must be defined as the host name or IP address of the ZIS as agents will recognize it. If, for example, the ZIS resides behind a firewall, in most cases the IP or host name will be that of the firewall and not that of the actual server hosting the ZIS.

Common Name (CN):

Optional Fields

Organizational Unit (OU):

Organization (O):

Locality Name (L):

State Name (ST):

Country Code (C):

E-Mail Address (E):

Create Cancel

4. Enter the necessary information to create a private key and self-signed certificate.
5. Click **Create** to accept the alias, name, and organizational information you have entered. The Server Certificates page is returned, and displays the name of the new certificate (alias) in the list.

6. Click on the alias name to view certificate details; the Certificate Details page is displayed.



Creating a Transport

To create a Transport, do the following:

1. In the navigation pane, click on **Server Settings > Transports**.
2. Click on HTTP or HTTPS, depending on which kind of Transport you want to create.
3. Click **Add...** The appropriate Add Transport page appears, as shown below.

HTTP Transports

Add Transport

☒ Activate this transport on startup

Server Port:

Server Address: (if applicable)

Limit to: concurrent connections

Save

Cancel

HTTPS Transports

Add Transport

☒ Activate this transport on startup

Server Port:

Server Address:

Limit to: concurrent connections

Require Client Authentication: ☐

Save

Cancel

4. Fill in the parameters as needed, making sure that the Server Port is unique on that server.
5. Click **Save**. The new Transport is displayed in the Transports list.

Activating and Deactivating Transports

Once defined, a Transport must be “activated” to carry data. For diagnostic or development purposes, it may also be useful sometimes to deactivate a Transport.

To activate or deactivate Transports, do the following:

1. In the navigation pane, click on **Server Settings > Transports**.
2. Click on HTTP or HTTPS, depending on which kind of Transport you want to manage. The HTTP Transports or HTTPS Transports page is displayed.

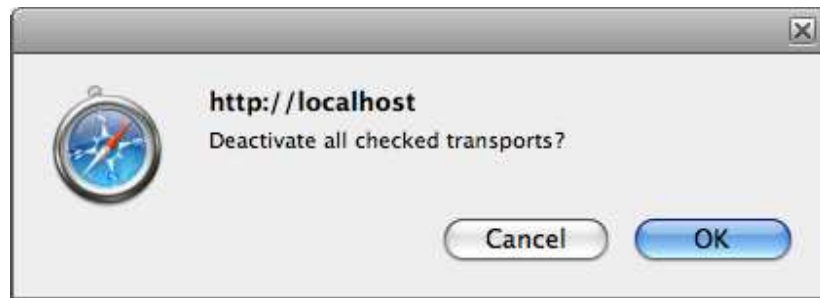


NOTE: Port, IP Address, Status, and Connections are displayed for each Transport.

3. Click the check box next to the Transport whose status you want to change. (The "Activate" and "Deactivate" buttons apply only to selected Transports.)
4. Click **Activate**; the status of the Transports immediately changes to “Active.”

-or-

5. Click **Deactivate**; a confirmation dialog is displayed.

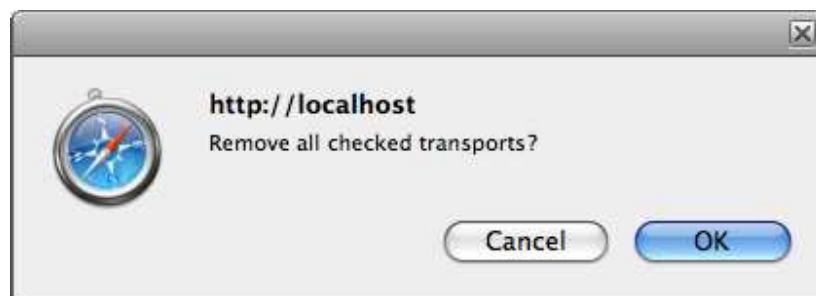


6. Click **OK** to deactivate the selected Transport(s), or **Cancel** if you want to cancel the operation and leave the selected Transport(s) in the "Active" status.
7. The confirmation window closes, and the status of the Transports is updated.

Removing Transports

If a Transport is no longer needed, it can easily be removed. To remove Transports, do the following:

1. In the left pane, click on the small box to the left of the folder icon labeled "Transports" (as shown below) until you see two icons under "Transports" labeled "HTTP" and "HTTPS".
2. Click on either HTTP or HTTPS, depending on which kind of Transport you want to remove.
3. The HTTP or HTTPS Transports page is displayed in the content pane.
4. Check the Transport to be deleted, and click **Remove**. (The "Remove" command acts only on selected Transports).
5. A confirmation dialog is displayed.



6. Click **OK** to delete the selected Transport(s), or **Cancel** to stop the operation. The confirmation window closes, and the Transports page updates.

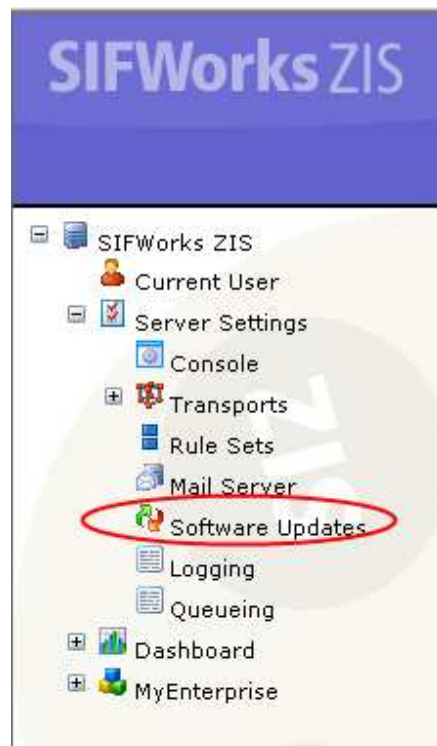
13. Software Updates

Software Update Wizard

The Software Update Wizard is accessible through Server Settings in the navigation pane. When activated, the Software Update Wizard checks for available updates of SIFWorks ZIS; if updates are available, the Software Update Wizard enables options for downloading those updates.

To activate the Software Update Wizard:

1. Start the ZIS, activate the Console and log in.
2. The Console displays the SIFWorks ZIS start page; the navigation pane is displayed in the left pane.



3. In the navigation pane, click **Server Settings > Software Updates**.
4. The Software Updates page is displayed in the content pane.
5. To start the Software Update Wizard, click **Check Update Server**.

-
6. The Software Update Wizard checks for available updates, reporting its status with each step in the process.
 7. The Wizard reports that “No update is available for this product,” or, if an update *is* available, the “Download and Extract Update” button is enabled.

14. Logging

The logging features are additional diagnostic tools in the SIFWorks ZIS administrator's tool chest. SIFWorks ZIS keeps a log for each zone and, separately, a log for each agent. The Text File Logger is enabled by default; the Database Logger must be activated and configured.

To configure the Database Logger:

1. Start the ZIS; open the Console and log in.
2. From the navigation pane in the left pane, choose **Logging**.



3. The Log Module Setting page is displayed in the content pane.

My Enterprise

Log Module Setting

Click a Logging Module to display or change its settings.

[Text File Logger](#)

[Database Logger](#)

Save

4. Expand the **Database Logger** link. The Log Module Setting page displays fields for entering Database Logger parameters.

My Enterprise

Log Module Setting

Click a Logging Module to display or change its settings.

[Text File Logger](#)

[Database Logger](#)

☒ Enable this module

Type: Hypersonic SQL (Built-In)

Server Address:

Port: (Leave blank to use default)

Database Name:

User:

Password:

Clean Logs Every: hours

Retain: days of log entries

 [View Database Logger activity](#)

Save

5. Under the Database Logger link, check “Enable this module.”
6. Enter the Database Logger parameters:

- a. Type
- b. Server Address
- c. Database name
- d. User
- e. Password
- f. Clean Logs Every...
- g. Retain

7. Click **Save** to accept your changes and return to the Zone Summary page.

Reviewing an Agent Log

To review an Agent Log:

1. Start the ZIS; open the Console.
2. Expand the **Zones** pane to show the list of Zones, and then select the Zone whose agent log(s) you wish to review.
3. The content pane displays the Zone Summary page.
4. Select the Zone whose agent you wish to manage or view.
5. The Agent Summary page is displayed in the content pane.

SIFWorks ZIS > My Enterprise > District B

District B

Agents • Provisioning • Zone Log • Workflow • Zone Settings

Agent Summary

There are 2 agents in this zone. Click an agent to manage it.

| Agent ID | Name | Status | From | To | Queued | Log |
|------------------------------------|--------------------|----------------|------|----|--------|---------------------|
| DataGeneratorAgent | DataGeneratorAgent | Not Registered | 0 | 0 | 0 | Log |
| SIFQuery | SIFQuery | Not Registered | 0 | 0 | 0 | Log |

[Add Agent...](#) [Remove](#)

Zone URLs

Agents connect to this zone via any of these URLs:

- <https://10.40.174.165:7443/District B>
- <http://10.40.174.165:7080/District B>

6. Select the Agent whose settings you wish to view; the selected Agent's settings page is displayed.
7. The Agent Log page is displayed.
8. Select **Text File**, or **Logging + Alerts Database** from the Module drop-down list.

Reviewing a Zone Log

1. In the navigation pane, click **My Enterprise**.
2. The content pane displays the Zone Summary page.

SIFWorks ZIS > My Enterprise

My Enterprise

Zones • Workflow

Zone Summary

The following zone and 1 zone group are managed by this enterprise. Zone groups may be used to build simple organizational trees that contain zone groups or zones. A zone's "Zone ID" is required to be unique within the enterprise. Click on a zone group name to view the contained zones and groups. Click on a zone name to manage it. To move or permanently delete a zone or zone group, mark one or more checkboxes and click the Move or Delete button.

| Zone ID or Group Name | Description | Agents | In | Out | Log |
|--|-------------|--------|----|-----|---------------------|
| <input type="checkbox"/> Districts--East (1 zones) | | | | | |
| <input type="checkbox"/> District B | test zone | 2 | 0 | 0 | Log |

[Create Zone...](#)
[Create Group...](#)
[Move](#)
[Delete](#)
[Export All Zones](#)

- Click on the Zone you wish to view or manage; the Agent Summary page is displayed in the content pane.

SIFWorks ZIS > My Enterprise > District B

District B

Agents • Provisioning • Zone Log • Workflow • Zone Settings

Agent Summary

There are 2 agents in this zone. Click an agent to manage it.

| Agent ID | Name | Status | From | To | Queued | Log |
|---|--------------------|----------------|------|----|--------|---------------------|
| <input type="checkbox"/> DataGeneratorAgent | DataGeneratorAgent | Not Registered | 0 | 0 | 0 | Log |
| <input type="checkbox"/> SIFQuery | SIFQuery | Not Registered | 0 | 0 | 0 | Log |

[Add Agent...](#)
[Remove](#)

Zone URLs

Agents connect to this zone via any of these URLs:

- <https://10.40.174.165:7443/District B>
- <http://10.40.174.165:7080/District B>

- Click the **Zone Log** tab.
- The Zone Log is displayed.

SIFWorks ZIS > My Enterprise > TestZoneB

TestZoneB

Agents • Provisioning • Zone Log • Workflow • Zone Settings

Zone Log

Module: [Text File](#)

Displaying 187 bytes

```
(* 9/15/08 11:08:06 AM MDT *)      useTemplateWorkflow = false
(* 9/15/08 2:14:13 PM MDT *)      useTemplateWorkflow = false
(* 9/15/08 2:19:58 PM MDT *)      useTemplateWorkflow = false
```

Using the Log Information

One important thing to remember when tracing a message through the log files is that each SIF_ *xxx* message (such as SIF_Register, SIF_Provide, etc.) is always followed by a SIF_Ack. If the SIF_Ack is successful (i.e. has no error code and message), then the data was delivered. If the SIF_Ack describes an error, then the data may not have been delivered successfully. Note that some types of SIF messages may communicate error information at a later time. When an agent cannot respond to a SIF_Request, for example, it will successfully acknowledge the request but return a SIF_Response with an error code and description to the requesting agent.

Log files by themselves do not always indicate what the problem is, but they can lead you to look in the right places.

This section describes three of the most common error scenarios and how to use the logs to help identify the underlying issue.

Request and Response

The Request/Response mechanism is particularly used in synchronization, when an agent is synchronizing data with the zone. The SIFWorks ZIS logs can help you diagnose problems when an agent is unable to synchronize data.

1. When synchronizing an agent with the zone, if no data is returned to that agent, follow the message choreography by looking for a SIF_Request message in the log.
2. If a SIF_Request message was sent by the requestor and was delivered to the provider, examine the SIF_Ack from the provider.
3. There may be an error such as "SIF Version not supported", "Query not supported," etc., that is preventing the provider from returning data to the requestor.
4. If the SIF_Ack has a success status code, then look for SIF_Responses being returned to the requestor.
5. Usually, if an error has occurred, there will be a SIF_Response with a SIF_Error payload that describes why the responder could not satisfy the request.
6. If you don't find a SIF_Response with a SIF_Error payload, then look at the agent's local log files. (If the Agent is unable to register, the error messages will appear on the Zone log.)

Event Reporting and Subscription

SIF_Events are sent during the normal course of operations; if an application is not making changes appropriately when SIF_Events are published, do the following:

1. If an agent is reporting events, but the events are not making their way to subscribers, first look for SIF_Event messages in the reporter's log and in the subscribers' logs.
2. If there are no SIF_Event messages, SIFWorks ZIS may have written a message to the log file that the subscriber does not support the version of SIF to which the event conforms. (The ZIS will not route messages to an agent that does not support the version the message conforms to.)
3. If there are no SIF_Event messages and no message from SIFWorks ZIS about SIF versions, check the SIF_Ack message that follows each SIF_Event to see if there were any errors.
4. If all looks good, then check the subscribing agent's local log file to see what it did with the data that it successfully received from the zone.

Registration

An agent cannot communicate unless it first registers with the ZIS; the log can help you track registration problems. When an agent is having trouble registering with the ZIS, look for SIF_Register, SIF_Provide, and SIF_Subscribe messages in the agent's log and examine the SIF_Ack messages that follow each one to determine if there were any errors in the registration process.

15. External Message Queuing

The external message queuing feature is designed to support high volume SIFWorks ZIS deployments where the default embedded database may not be suitable. The external databases supported by the SIFWorks ZIS are MS SQL Server and Oracle.

Before configuring the database connection parameters for this feature, the ZIS message queuing DDL script must be used to create the necessary tables on the target database server. The database-specific DDL script can be copied from a text area on the Queuing configuration page, or from the “db/script” directory in the ZIS install directory. To reveal the text area, select the target database from the “Type” combo-box, and then click on the “Database Script” link. To reveal the text area, select. Click in the text area and use the browser appropriate “select all” and “copy” key sequences to copy the DDL script to the clipboard.

Configuring Database Queuing

To configure database queuing, navigate to the **SIFWorks ZIS > Server Settings > Queuing** configuration page and perform the following steps:

1. Use the DDL script to create necessary database/tables (as described above).
2. Enter the Server Address, Port and Database Name for the target database.
3. Enter the user login and password.
4. Click the “Test Connection” button to verify the connection parameters.
5. Click “Save” button.
6. Restart the ZIS to ensure that the configuration is correct, and the ZIS is able to communicate with the external database.

Database Configuration
Type: MS SQL 2000 and 2005
Server Address: localhost
Port: 1433
Database Name: SIFWorksMQS
User: sa
Password:
 Untested
Database Script

After the “Save” button is clicked, the ZIS will attempt to switch to the external database to queue SIF messages. Please note that after switching between embedded to external databases, the SIF messages stored in the original database are not copied to the new database.

Part VII

USERS AND GROUPS OVERVIEW; MANAGING USERS

16. Users and Groups Overview

Best Practice Recommendation

Edustructures recommends the creation of separate accounts for individual users. Permissions can be assigned to user groups, in order to enable access to parts of the ZIS console

The first time you install SIFWorks ZIS, you'll be prompted to assign a password to the sifworks account. The sifworks account always exists and cannot be deleted.

Note: When upgrading from SIFWorks ZIS version 2 to version 3, the user accounts contained in the zis.xml file will be migrated to the new user account format. User accounts that are migrated to the new format maintain the same password, but must have an administrator group assigned to them by the "sifworks" administrator.

Security Groups

Security Groups are the means by which users are granted administrative and / or operational permissions. Associating a user with any given security group(s) assigns the respective group permissions to the user.

The default administrator account is "sifworks," and may not be disabled or deleted; it is always available regardless of other user management configuration.

ZIS 3.0 (and later) Enterprise installs and maintains four default security groups (Server Administrator, Server Operator, Zone Administrator, and Zone Operator) and the permissions for those groups are pre-set. (See "Creating Security Groups for information about establishing additional or "custom" security groups).

A list of permissions for the default Security Groups (and descriptions of those permissions) follows:

| Group | Permissions |
|----------------------|--|
| Server Administrator | Server Settings Modify Server Certificates Modify Enterprise Users Reset Passwords Enterprise Users Modify Enterprise User Groups Modify Enterprise Workflow Modify Enterprise Zones Modify Enterprise Any Zone Modify Enterprise Any Zone Agents Modify |
| Server Operator | Server Settings View Enterprise Users View Enterprise User Groups View Enterprise Workflow Modify Enterprise Zones Modify Enterprise Any Zone Modify Enterprise Any Zone Agents Modify |
| Zone Administrator | Server Settings View Enterprise Workflow View Enterprise Zones Modify Enterprise Any Zone Modify Enterprise Any Zone Agents Modify |
| Zone Operator | Server Settings View Enterprise Workflow View Enterprise Any Zone View Enterprise Any Zone Agents Modify |

Groups operate the same for “Local File” mode and “External LDAP” mode with the exception that a user may not be directly assigned to a group in “External LDAP” mode. In “External LDAP” mode an administrator must use the “Attribute to Group Mapping” or “Group to Group Mapping” in the ZIS administration console to create an association between some feature of LDAP and a local ZIS Group. Group Mapping will be described in detail in the “External LDAP” section.

Permissions

| Permission | View | Modify |
|--|--|--|
| Server Certificates | Permits viewing the list of server and trusted agent certificates. Also permits download of certificates to local computer. | Permits creation and deletion of certificates. Also permits upload of trusted agent certificates. Implies "Server Certificates View" permission. |
| Server Settings | Permits viewing of general ZIS server settings including "Console", "Transports", "Software Updates" and "Logging". Access to other ZIS resources requires a resource specific permission. | Permits modification of general ZIS server settings including "Console", "Transports", "Software Updates" and "Logging". Implies "Server Settings View" permission. Access to other ZIS resources requires a resource specific permission. |
| Enterprise User Groups | Permits viewing the list of ZIS Enterprise User Groups and each Group's settings. | Permits creation and deletion of ZIS Enterprise User Groups, and modification of existing User Group settings. Implies "Enterprise User Groups View" permission. |
| Enterprise Users | Permits viewing the list of ZIS Users and each User's settings. | Permits creation and deletion of ZIS Users, and modification of existing User settings. Implies "Enterprise Users View" permission. |
| Note: Enterprise Users also have "Reset User Password" permissions. | | |
| Enterprise Workflow | Permits viewing Enterprise Workflow and Enterprise Rule Sets. | Permits modification of the Enterprise Workflow and Enterprise Rule Sets. Implies the "Enterprise Workflow View" permission. |

| Permission | View | Modify |
|-----------------------------------|---|--|
| Enterprise Zones | Permits viewing the list of ZIS enterprise zones. Zone groups are always visible, as they have no permissions associated with them. | Permits creation and deletion of ZIS zones. Also permits modification of Zone Templates. Implies "Enterprise Zones View" permission. |
| Enterprise Any Zone | Permits the viewing of any enterprise zone and zone agent. | Permits modification of any existing ZIS zone. Implies "Enterprise Any Zone View" Permission. Includes permission to edit zone template workflow. Does not imply creation and deletion of Zones. |
| Enterprise Any Zone Agents | n/a | Permits the creation, deletion and modification of zone agents. |
| Zone <zoneId> | Similar to "Any Zone View" permission except that it only applies to a specific zone referenced by "<zoneId>". Dynamically created and deleted. | Similar to "Any Zone Modify" permission except that it only applies to a specific zone referenced by "<zoneId>". Includes permission to edit zone workflow. Dynamically created and deleted. |
| Zone <zoneId> Agents | n/a | Similar to "Enterprise Any Zone Agents Modify" Permission except that it only applies to a specific zone referenced by "<zoneId>". Permits modification of agent settings and queues, but not adding or deleting zone agents. Dynamically created and deleted. |

Setup

Users and Groups Setup is where user account sources (and related configurations) are selected. The default configuration is to use local files to store user accounts and group configuration information. When you select “Setup” from the Users and Groups branch of the navigation pane, the content pane displays the Users and Groups Settings page.

“Local file” and “External LDAP” are the options for the user accounts source. As the content pane text explains, “Local File” user accounts are managed by the SIFWorks ZIS, and saved in a conf directory. “External LDAP” user accounts are managed by the directory server, and require knowledge of the conf directory.

To set up LDAP user accounts:

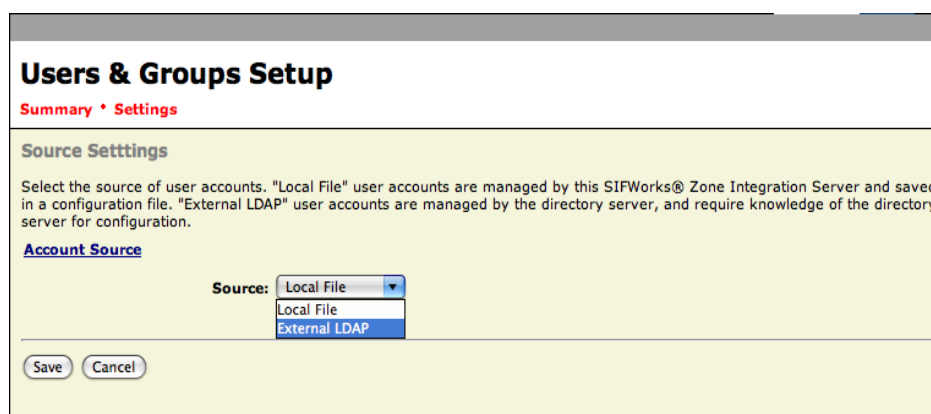
1. Log in as the sifworks user. (Only the “sifworks” user, or other user account with management permissions can create or edit other Users.)
2. The SIFWorks ZIS Console is active. Expand the navigation pane.
3. In the navigation pane, click **My Enterprise > Enterprise Settings > Users & Groups > Setup**.



4. The Users and Groups Setup page displays the current Setup Summary; in the example below, the Account Source is “Local File.”



5. To view or edit Account Source settings, click the **Settings** tab.
6. The Source Settings page is displayed.



7. The Account Source options are listed in the “Source” drop-down. Select “External LDAP,” if you want user accounts to be managed by the directory server. (This option requires knowledge of the directory server for configuration).

Source Settings

Select the source of user accounts. "Local File" user accounts are managed by this SIFWorks® Zone Integration Server and saved in a configuration file. "External LDAP" user accounts are managed by the directory server, and require knowledge of the directory server for configuration.

Account Source

Source: External LDAP ▼

LDAP Connection

Address: 10.40.174.93

Port: 10389

Search User DN: uid=admin,ou=system

Search User Password: *****

☐ Encrypted (StartTLS)

LDAP Configuration

Profile: Apache Directory ▼

Base DN: dc=example,dc=com

User Object: inetOrgPerson

User Identifier Attribute Name: cn

Group Operational Attribute Name:

☐ Use group operational attribute name (instead of simple search)

Attribute Configuration

Local Correlation Attribute Name: uid

First Name:

Last Name:

Full Name:

Phone:

Email:

Save Cancel

8. Enter parameters for LDAP Connection and Configuration, and Attribute Configuration.
9. Click **Save** to accept your changes. The Users & Groups Setup Page updates to include tabs for "Attribute to Group Mappings" and "Group to Group Mappings," settings now displayed at the bottom of the Users & Groups Setup Page.

SIFWorks ZIS > My Enterprise

Users & Groups Setup

Summary • Settings • **Attribute to Group Mappings** • Group to Group Mappings

Setup Summary

Account Source

Source: External LDAP

LDAP Connection

Address: 10.40.174.93
Port: 10389
Search User DN: uid=admin,ou=system
Encrypted: false

LDAP Configuration

Base DN: dc=example,dc=com
User Object: inetOrgPerson
User Identifier Attribute Name: uid
Group Operational Attribute Name: isMemberOf
Use Group Operational Attribute: false

Attribute Configuration

Local Correlation Attribute Name: uid
First Name:
Last Name:
Full Name:
Phone:
Email:

LDAP Attribute to Group Mapping

| LDAP Attribute | Value | Local Group Name |
|----------------|-------|----------------------------|
| ou | = | Users Server Administrator |

LDAP Group to Group Mapping

| LDAP Group Name (CN) | Local Group Name |
|----------------------|------------------|
| limitedUsers | Zone View |

10. To add a mapping, click either the “Attribute to Group Mappings” or “Group to Group Mappings” link.
11. The corresponding mappings page is displayed.

User & Group Setup

Summary • Settings • Attribute to Group Mappings • **Group to Group Mappings**

Attribute to Group Mapping

These mappings associate LDAP attributes in the user object with local groups. An LDAP attribute is not required to have a value, and the existence of an attribute creates the association.

| LDAP Attribute | Value | Local Group Name |
|----------------------|-------|----------------------|
| <input type="text"/> | = | <input type="text"/> |

Save Cancel Delete Add Mapping

Any Zone Administrator
Server Administrator
Zone View
Server Operator
Any Zone Operator

-
12. Click **Add Mapping**. Enter the attribute, group, or value information in the respective fields. From the **Local Group Name** drop-down, select the Local Group Name with which the mapping is to be associated. Click **Save** to accept the changes you've made, or **Cancel** to stop the operation.
 13. To delete a mapping, select the mapping from the Attribute to Group or Group to Group mappings list, and click **Delete**. A confirmation dialog is displayed.



14. Click **OK** to delete the selected mappings, or **Cancel** to stop the operation.

17. Creating and Managing User and Group Accounts

Creating a User

1. Log in as the “sifworks” user, or a user account with management permissions.
2. Expand the navigation pane.
3. In the navigation pane, click **My Enterprise > Enterprise Settings > Users & Groups**.



4. Set up the source of user accounts.
 - “Local File” user accounts are managed by this SIFWorks ZIS® Zone Integration Server and saved in a configuration file.
 - “External LDAP” user accounts are managed by the directory server, and require knowledge of the directory server for configuration


In the navigation pane, click **Users**. The Users Summary page displays current user names.

SIFWorks ZIS > My Enterprise

Users

Users Summary

The following user is managed by this SIFWorks® Zone Integration Server. Click a login name to configure the user's account.

| Login Name | Full Name | Last Login | Status | Groups |
|--|--------------|------------|--------|--------|
|  MBingham | Mary Bingham | | | 4 |

[Add User...](#) [Delete](#) [Activate](#) [Inactivate](#) [Force Logout](#)

5. Click **Add User**. The User Settings page displays fields for entering Login, Contact, and Security Group information.

SIFWorks ZIS > My Enterprise

User

User Settings

Login & Password

Login Name: *

Password: *

Confirm Password: *

Name & Contact Info

Name:

Phone:

Email:

Security Groups

| Group Name | Description |
|--|-------------|
| <input checked="" type="checkbox"/> Any Zone Administrator | |
| <input checked="" type="checkbox"/> Any Zone Operator | |
| <input checked="" type="checkbox"/> Server Administrator | |
| <input checked="" type="checkbox"/> Server Operator | |

Note Fields with an asterisk are required.

[Save](#) [Cancel](#)

Users are defined with a few simple parameters.

Login Name is the name the user types in at the SIFWorks ZIS login page. This cannot be changed after a user is created.

Password is the user's secret authentication code for logging in to SIFWorks ZIS. Password can be changed by setting the user's account to require the user to choose a new password at the next login.

Name & Contact Info are the user's name of record, phone number, and email address.

Security Groups are the means by which users are granted administrative and / or operational permissions. Associating a user with any given security group(s) assigns the user the respective group permissions.

6. Enter the user information, and designate appropriate group associations.
7. Click **Save** to accept the information entered for the new user. The console returns you to the Users Summary page, where the new user is now listed.

Changing a User's Profile

To change a User's information, do the following:

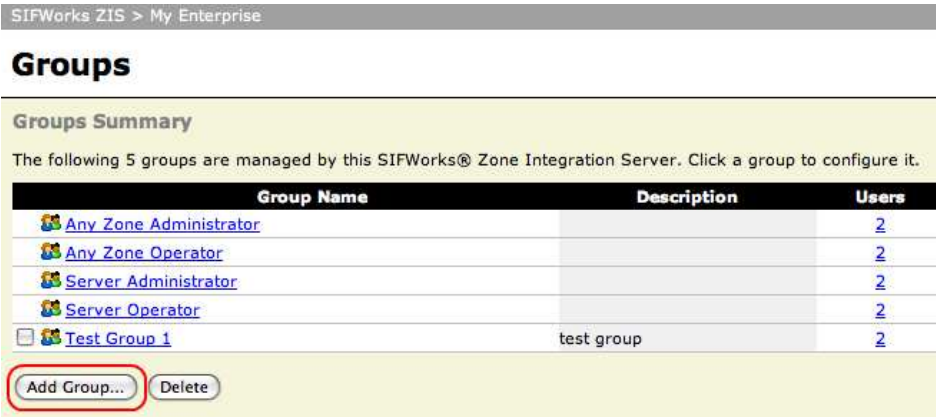
1. Log in as the sifworks user (or any user with administrative permissions).
2. In the navigation pane, click **Users**.
3. The Users Summary page is displayed in the content pane.
4. Click the name of the user profile you wish to edit.
5. The User Settings page is displayed for the selected user account.
6. Add or edit user information in the User Settings fields.
7. Check / uncheck user association with Security Groups.
8. Click **Save** to accept your changes; the content pane returns the Users Summary page.

Creating a Security Group

It may be necessary to create and customize permissions for a security group other than the groups that are configured in ZIS 3.0 (and later) at installation.

To create a new security group:

1. Log in as the administrator.
2. In the navigation pane, choose Enterprise Settings > Users & Groups > Groups.
3. The Groups Summary page is displayed in the content pane.



4. Click **Add Group**.
5. The Groups Summary page is displayed.

Group Settings

Name & Description

Group Name:
Description:

Permissions

Server Permissions

☐ Certificates Modify
☐ Certificates View
☐ Settings Modify
☐ Settings View

Enterprise Permissions

☐ Settings Modify
☐ Settings View
☐ User Groups Modify
☐ User Groups View
☐ Users Modify
☐ Users Reset Password
☐ Users View
☐ Workflow Modify
☐ Workflow View
☐ Zones Modify
☐ Zones View
☐ Any Zone Modify
☐ Any Zone View
☐ Any Zone Agents Modify

(M) = Zone Modify
(V) = Zone View
(A) = Zone Agents Modify

(M)(V)(A) Zone Permissions

☐ ☐ ☐ ☐ Test Group 1
☐ ☐ ☐ ☐ Test Zone 44 A
☐ ☐ ☐ ☐ Test Zone A
☐ ☐ ☐ ☐ Test Zone C
☐ ☐ ☐ ☐ TestGroup2
☐ ☐ ☐ ☐ TestZoneA
☐ ☐ ☐ ☐ TestZoneB

Save Cancel

- Select the Server, Enterprise, and Zone permissions for the new Security Group.
- Click **Save** to accept the changes and return to the Groups Summary page.
- Add Users to the new group. (Select **Users** from the navigation pane; then, from the User Settings page in the content pane, check the new security group with which you want the selected user to be associated.)

Part VIII

RULE SETS AND WORKFLOWS

18. Introduction to Rule Sets and Workflows

Rules and Rule Sets

A rule is an “If/Then” logic block for the message workflow. A set of conditions (“If...”) control the execution of a rule’s actions (“Then...”).

A SIFWorks Rule Set is defined as one or more rules that can be applied to message workflows to filter or transform messages before delivery to the destination agent(s).

Workflows

SIFWorks ZIS 3.0 (and later) Enterprise Edition uses message workflows to support validating, filtering and transforming SIF_Request, SIF_Response and SIF_Event messages at defined points in the message lifecycle. Workflows only see SIF_Event, SIF_Request and SIF_Response messages as they pass through the SIFWorks ZIS.

Workflows and rule sets allow a SIFWorks ZIS administrator to repair SIF messages sent by abnormally behaving agents, prevent destination agents from seeing specific messages, modify SIF response messages, and perform detailed message tracing. A zone workflow with one or more rule sets may validate, filter or transform messages. The end result of any message transformation must be a valid SIF message.

Message workflows exist at the enterprise and zone levels, and include zero or more rule sets. The SIFWorks ZIS routes messages normally if a zone workflow has no rule sets.

Enterprise Rule Sets

Rule Set Summary

The following 2 Rule Sets are managed by this SIFWorks® ZIS enterprise. Rule sets may filter inbound messages, or transform messages before they are delivered to the destination agent(s). Contact your SIFWorks® ZIS support provider to obtain a catalog of endorsed rule sets.

Click on a Rule Set name to edit the Rule Set.

| Rule Set Name | Description |
|--|--------------|
| <input type="checkbox"/> Test Rule Set 1 | MB Rule Sets |
| <input type="checkbox"/> Test Rule Set 2 | MB Rule Sets |

[Add Rule Set...](#)[Delete](#)[Import](#)[Export](#)

Rule Set Editor

A rule set may filter inbound or transform queued SIF_Event, SIF_Request and SIF_Response messages. Rule set behaviors should be self-contained so that any rule set may be combined with other rule sets to develop complex message workflows. Any rule set that contains one or more "Reject Message" actions is marked as a message filter, and only executed for inbound SIF messages. Note that messages that are rejected with the "Reject Message" action never enter an agent's queue.

Rule Set Name:

Description:

[Add Rule](#)[Remove Rule](#)[Move Up](#)[Move Down](#)[Save](#)[Cancel](#)

Rule Set Importing/Exporting

SIFWorks ZIS 3.0 (and later) Enterprise Edition offers Rule Set importing and exporting. This feature may be used to export a rule set from a test ZIS and then import it into a production ZIS. Rule sets may be exported to a file and emailed to support personnel for debugging, or common rule sets may be maintained by Edustructures support and made available to customers for importing.

A ZIS administrator with access to the install directory of the ZIS may copy rule set files directly into the "workflows/rules" directory and then restart the ZIS. The copied rules will be shown in the enterprise "Rule Sets" node after the ZIS restarts.

SIFWorks ZIS Rule Set Editor

Rule Sets may be created using the SIFWorks ZIS Enterprise Edition Rule Set Editor. The rule set editor provides a graphical user interface for quickly constructing rule sets and using them immediately in a Workflow.

The rule set editor expects that an author is familiar with SIF messaging, XPath and XSLT technologies. The rule set editor does not provide a mechanism for testing rule sets, so each XPath and XSLT should be tested against a valid SIF message using an appropriate tool.

Basic Rule Sets

Basic rule sets include rule actions that are only performed on the Message Inbound and Message Ready To Process message lifecycle events. Within a rule set, any rule that contains a Reject Message action is run on the Message Inbound event, and all other rules are run on the Message Ready To Process event. In basic rule sets only the existence of the Reject Message action determines when a rule is run – the conditions do not affect this behavior.

The default behavior of the ZIS rule set editor is to only allow editing or basic rule sets, but does support viewing of advanced rule sets.

Conditions

SIFWorks ZIS 3.0 (and later) Enterprise Edition supports a pre-defined set of conditions. Note that when there are multiple conditions in a rule that the “perform actions when” condition collation should be used to determine how the condition results are evaluated for rule action execution.

Actions

When a rule’s conditions have been met, the rule’s actions are executed in the sequence defined by the rule.

Actions that successfully transform the SIF message will cause subsequent transformation actions to operate on the transformed message. Care must be taken when performing multiple message transformations in a rule set or workflow to not introduce message format dependencies in the later transformations.

SIFWorks ZIS 3.0 (and later) extensions may add new actions to the list of built-in rule actions.

SIFWorks ZIS 3.0 (and later) supports these Rule Set Actions:

- Log
- Delete Message
- Hold message
- Reject Message
- Remove Elements
- Replace Element Values
- XSL Transform

19. Workflows

A SIFWorks ZIS Workflow may consist of one or more rule sets. The rule sets in a workflow are executed in order. A rule set must be added to a workflow for that rule set to be executed. A rule set may be added to more than one workflow.

SIFWorks ZIS Workflow Editor

The SIFWorks ZIS 3.0 (and later) Enterprise Edition Workflow Editor is used to setup workflows. Rule sets may be added to or removed from a workflow. A rule set is only executed when it is part of a workflow.

The SIFWorks ZIS 3.0 (and later) Enterprise Edition defines three types of workflows: enterprise, zone template and zone workflows. Each workflow type has the same basic characteristic that it executes a list of rule sets in order.

Enterprise Workflow

The enterprise workflow defines a list of rules that may be executed before and after the zones' workflow. The enterprise workflow will always be wrapped around a zone workflow before the zone workflow is executed. The enterprise workflow may be used to perform any set of actions consistently across all zones within the enterprise.

Zone Template Workflow

The zone template workflow defines the default workflow for the all zones that are created from the zone template. When the zone template workflow changes, all zones that are based on that zone template will see the workflow changes. A zone may override the zone template workflow and use a zone specific workflow.

The zone template workflow will display any enterprise workflow rule sets as non-editable rule sets before and after the zone template workflow rule sets.

Zone Workflow

The zone workflow will only be used if a zone administrator specifically changes the "use zone template workflow" setting in the zone workflow editor. Once an administrator has changed the zone template workflow setting, the administrator may create a workflow that is specific the zone. An administrator always has the option of changing the use zone template workflow setting back to its original value (to use the zone template workflow).

The zone workflow will display any enterprise workflow rule sets as non-editable rule sets before and after the zone workflow rule sets.

Part IX

INTRODUCTION TO SIF MESSAGE VERSION TRANSLATION

20. SIF Message Version Translation

SIFWorks ZIS 3.1 Enterprise Edition introduces the SIF Message Version Translation feature that enables agents with incompatible SIF versions to properly exchange SIF messages. Incompatible SIF versions will be major SIF versions like SIF 1.5r1 and SIF 2.0r1. This feature may be enabled in the zone settings (for all agents in the zone), or per-agent in the agent settings.

There are two cases where the SIF message version translation feature may be required. The first case is when a new agent that only supports a recent SIF version is introduced to an existing zone that is configured with SIF 1.5r1 agents. The second case is when an entire zone is being updated to SIF 2.0r1 based on an organizational mandate, but one or more agents are unable to support SIF 2.0r1 because the vendor has not released a new version of the agent or the agent was built by a contractor to support an in-house application.

The SIFWorks ZIS currently supports the most common SIF data objects.

- Authentication
- EmployeePersonal
- LEAInfo
- SchoolCourseInfo
- SchoolInfo
- SectionInfo
- StaffAssignment
- StaffPersonal
- StudentPersonal
- StudentSchoolEnrollment
- StudentSectionEnrollment
- TermInfo

Configuration

SIF Message Version Translation configuration is performed at the agent level. Verify behavior of the agent before using SIF Version Translation.

1. Open up the ZIS console and navigate to the agent that needs to perform SIF Version Translation.
2. Click on Agent Settings.
3. Expand **Messaging Options** by clicking on the **Messaging Options** link.

SIFWorks ZIS > MyEnterprise > TestZone1 > TestAgent1

TestAgent1
[Queue](#) • [Log](#) • [Access Control](#) • [Provisioning](#) • [Messaging](#) • [Controls](#) • [Agent Settings](#)

Agent Settings

Agent ID: TestAgent1

Agent Name: (Optional)

Agent Template: - No Agent Template -

Agent Settings are inherited from the agent template:

[Log Options](#)

[Messaging Options](#)

| | On | Off | Default |
|---------------------------------|----------------------------------|-----------------------|--|
| Validate XML | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> Off (Factory) |
| Allow Pull Mode | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On (Factory) |
| Can Request SIF_ZoneStatus | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> Off (Factory) |
| Require HTTPS for all messages | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> Off (Factory) |
| Perform SIF Version Translation | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> Off (Factory) |

[Push Options](#)

[Compatibility Options](#)

Save

Cancel

4. Select the **On** radio button for **Perform SIF Version Translation**.
5. Expand **Compatibility Options** by clicking the **Compatibility Options** link.

[Compatibility Options](#)

| | On | Off | Default |
|---|----------------------------------|-----------------------|---|
| Use SIF_OriginalMsgId when processing Pull Acknowledgements | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On (Factory) |
| Retry message when acknowledged with a Transport Error | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On (Factory) |
| Allow self-addressed events to enter the queue | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> On (Factory) |
| Response Validation | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> On (Factory) |

6. Verify the status of the **Response Validation** option.

7. If Response Validation is **Off**, select the **On** radio button.

8. Click Save.

SIF Version Translation will now be performed on any message that the agent sends or receives.

Customization

The version translation for these objects is driven by the same technology that enables Edustructures agents to support multiple SIF versions. This translation technology ensures that translated SIF data objects are valid for the target SIF version. Zones that have XML message validation enabled should be able to turn on SIF version translation for a specific agent and have that agent seamlessly communicate with other agents in the zone; however, if message validation is turned off because one or more agents transmit non-standard SIF messages, then the SIF version translation mappings may be customized by a ZIS administrator.

See the SIFWorks ZIS Integration Guide for details about customizing the translation mappings.

Edustructures highly recommends evaluating behavior of the SIF Version Translation feature in a sandbox environment before enabling it in a production environment. One tool that is available to evaluate the SIF version translation behavior is the “hold” message filter feature in the SIFWorks ZIS. When the “hold” filter is enabled, a ZIS administrator may manually inspect SIF messages in an agent’s queue before releasing them to the agent.

Part X

MAINTENANCE TASKS

21. Mail Server Settings

In order to send email notifications that include dashboard reports, the Mail Server Settings must be established. Currently, email (SMTP) is the only delivery channel for notifications.

Note: After the Mail Server settings are saved, Notification rules are required to trigger a notification email. See the section “Dashboard and Notifications” for instructions on setting up e-mail notifications.

To configure Mail Server settings:

1. Log into the SIFWorks ZIS.
2. The SIFWorks ZIS main console is displayed.

SIFWorks ZIS

Logged in as sifworks (Logout)

Console Help

SIFWorks ZIS

Enterprises • Workflow • Server Log • Environment

Enterprises

The following enterprises are managed by this SIFWorks® Zone Integration Server. Click on the enterprise name to manage it.

| Enterprise Name | Host | Zones | Version |
|------------------------------|--------------|-------|---------------------------------------|
| MyEnterprise | 10.40.106.76 | 0 | SIFWorks(R) ZIS 3.2.0.42 (06-18-2009) |

[SIFWorks ZIS License](#)

Product: SIFWorks ZIS

Licensed To: Edustructures QA

Notice: For use by Edustructures QA only

Serial #:

Subscription: 10/01/2003 - 01/01/2020

Support Provider: [Edustructures LLC \(1-877-790-1261\)](#)

3. Expand the Server Settings node in the navigation tree.



4. Click on **Mail Server** in the navigation tree.
5. The **Mail Server Settings** page is displayed.

SIFWorks ZIS

SIFWorks ZIS

Mail Server Settings

SMTP mail server settings must be set up in order to activate dashboard notifications.

SMTP

SMTP Server: (Host name or IP address)

Port:

From:

☐ **Authenticate with user name and password**

User:

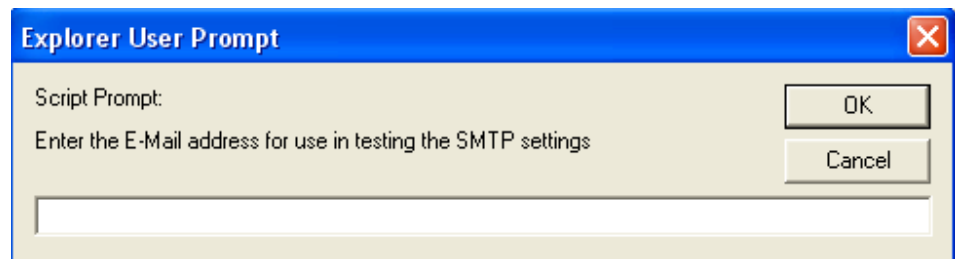
Password:

6. Enter information into the SMTP fields.
 - a. **SMTP Server:** Enter the host name or IP address of the email server.
 - b. **Port:** Enter the number of the port through which emails will be transmitted; the default is "25."
 - c. **From:** Enter the address of the ZIS that will appear in the "From" field of all notification emails.

-
- d. **Authenticate with user name and password:** Check this box if the server requires user name and password in order to send email notifications; enter user name and password. (If the “Authenticate...” box is unchecked, user name and password are not used.)

7. To test the SMTP settings, click the **Test** button.

8. A user prompt is displayed.



9. Enter an e-mail address for use in testing the SMTP settings.

10. Click **OK**.

11. Verify that the Notifications settings have been established. (See Chapter 22, “Dashboard and Notifications.” Mail Server settings and Notifications settings work in concert to send e-mail).

22. Dashboard and Notifications

The SIFWorks ZIS Dashboard is provided to monitor the health and operational state of the ZIS. The Dashboard is accessible from the SIFWorks ZIS navigation pane.

Accessing the Dashboard

1. Log into the SIFWorks ZIS.
2. The SIFWorks ZIS main console is displayed.



3. Click on the **Dashboard** link in the navigation pane.

Reports

By default, the Dashboard opens on the Report page, where you can define, generate, save, and print reports. Reports can display one or all of the following elements in section or table view: agent, enterprise, server, or zone.

Dashboard

Report • Notifications

Report

Set the report definition parameters and click "Generate" to view the report. Save the report definition by changing the name of the report and clicking "Save Definition". Save the "Dashboard" report to create a default report definition.

Report

Dashboard

display

all

elements

with

section

format

Generate

Save Definition

Printer Friendly Report...

Collapse Sections

Expand Sections

[...]SIFWorks ZIS

Depth: 0

Enterprise Count: 1

Name: SIFWorks ZIS

Path: /SIFWorks ZIS

Type: server

The default report, "Dashboard," includes **all** elements, and is displayed in section view, reflecting the Enterprise and Zone hierarchy found in the navigation pane. The default report can be edited and saved, accessible thereafter by clicking on **Dashboard** in the navigation pane. Other saved reports, named and defined by the administrator, will appear **under** the Dashboard element in the navigation pane.

Generating and Saving the Default Dashboard Report

To generate a report:

1. Open the ZIS.



2. Click on **Dashboard** in the navigation pane.
3. The “Dashboard Report” displays in default section hierarchy, reflecting the Enterprise and Zone hierarchy found in the navigation pane. (The default report is set to display **all** elements in section format.)

Dashboard

Report > Notifications

Report

Set the report definition parameters and click "Generate" to view the report. Save the report definition by changing the name of the report and clicking "Save Definition". Save the "Dashboard" report to create a default report definition.

Report:

display: elements

with: format

Generate

Save Definition

Printer Friendly Report...

Collapse Sections

Expand Sections

[+]SIFWorks ZIS

Depth: 0

Enterprise Count: 1

Name: SIFWorks ZIS

Path: /SIFWorks ZIS

Type: server

4. To generate a default report as it is currently defined (displaying **all** elements), click the **Generate** button. To save the default report as it is currently defined, click the **Save** button. After the default “Dashboard” report is saved, you can edit it by clicking on the **Edit** button.

Generating and Saving a Definition

To save a specific report definition/layout, change the report name (from the default “Dashboard”) and click the “Save Definition” button. The saved definition will appear under the Dashboard element in the navigation pane.

After a report definition is saved, select it in the navigation pane to generate and display a new report. A saved report definition does not save a snapshot of the values. To capture the values from a generated report, use the “Printer Friendly Report...” button to open a new browser window, and save or print the contents of the printer friendly window. A saved definition may also be included in an email notification by entering the name of the report in the “Report Name” field of the “Send Email” notification action.

To generate and save a new report:

1. Open the ZIS.



2. Click on **Dashboard** in the navigation pane; by default, the Dashboard opens on the Report page.

3. The default “Dashboard Report” displays in section hierarchy. (The default report is set to display **all** elements in section format.)

The screenshot shows the 'Dashboard' report configuration page. At the top, it says 'Dashboard' in bold, followed by 'Report • Notifications' in red. Below this is a 'Report' section with instructions: 'Set the report definition parameters and click "Generate" to view the report. Save the report definition by changing the name of the report and clicking "Save Definition". Save the "Dashboard" report to create a default report definition.' The configuration fields are: 'Report' (text box with 'Dashboard'), 'display' (dropdown with 'all' selected, followed by 'elements'), and 'with' (dropdown with 'section' selected, followed by 'format'). Below these are three buttons: 'Generate', 'Save Definition', and 'Printer Friendly Report...'. At the bottom of the configuration area are two buttons: 'Collapse Sections' and 'Expand Sections'. Below the configuration area is a preview box showing the report output for '[-]SIFWorks ZIS', including details like 'Depth: 0', 'Enterprise Count: 1', 'Name: SIFWorks ZIS', 'Path: /SIFWorks ZIS', and 'Type: server'.

4. Enter a title in the “**Report**” field.

A close-up of the 'Report' field, showing the label 'Report' and a text box containing 'MyReport1'.

5. Choose the elements to be displayed in the report. Click on the drop-down list in the “**display elements**” field, and choose the element to include in the report. (Elements in the list are: all (agent, enterprise, server, and zone) or server. In the following example, **all** is the selected element.)

A close-up of the 'display elements' dropdown menu. The label 'display' is to the left of the dropdown. The dropdown is open, showing a list of options: 'all' (highlighted in blue), 'agent', 'enterprise', 'server', and 'zone'. The label 'elements' is to the right of the dropdown.

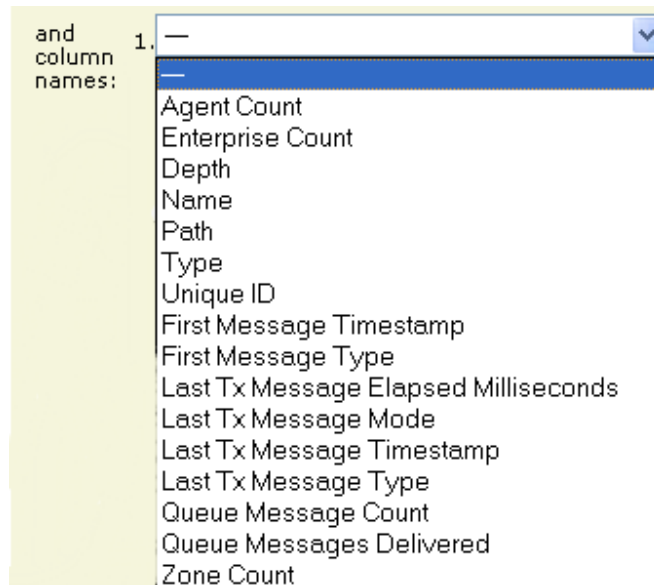
6. Choose the format in which the report will be displayed. Click on the drop-down list in the “**with format**” field. In the following example, **table** format is selected.



The image shows a form field labeled "with format". It contains a dropdown menu with three options: "table", "section", and "table". The first "table" option is selected and highlighted in blue.

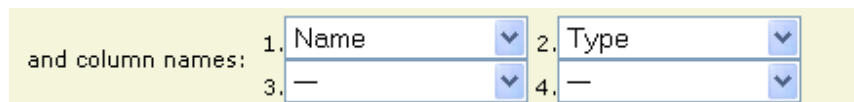
7. Choose the column names for your report. The column names in the list are Enterprise Count, Depth, Name, Path, Type, Unique ID, First Message Timestamp, First Message Type, Last Tx Message Elapsed Milliseconds, Last Tx Message Mode, Last Tx Message Timestamp, Last Tx Message Type, Queue Message Count, Queue Messages Delivered, and Zone Count.

Define up to four column names.



The image shows a form field labeled "and column names:". It contains a dropdown menu with a list of column names. The first option, "Name", is selected and highlighted in blue. The list of options includes: "Name", "Enterprise Count", "Depth", "Path", "Type", "Unique ID", "First Message Timestamp", "First Message Type", "Last Tx Message Elapsed Milliseconds", "Last Tx Message Mode", "Last Tx Message Timestamp", "Last Tx Message Type", "Queue Message Count", "Queue Messages Delivered", and "Zone Count".

In the following example, Column 1 is set to “Name” and Column 2 to “Type.”



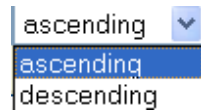
The image shows a form field labeled "and column names:". It contains four dropdown menus. The first dropdown menu is set to "Name", the second to "Type", the third to "—", and the fourth to "—".

8. Choose the sorting criterion in the **sort by** drop-down list. (This is the same list as is available for column names.) In the following example, the **sort by** criterion is “Name.”



The image shows a form field labeled "sort by". It contains a dropdown menu with a list of column names. The first option, "Name", is selected and highlighted in blue.

9. Choose the order in which the elements of the report will be displayed. (The options are in ascending or descending order). In the following example, the selected order is **ascending**.)



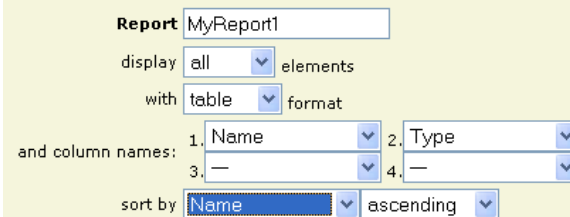
ascending
ascending
descending

10. The report page is populated with the selected name, element, format, and sorting options.

Dashboard

Report

Set the report definition parameters and click "Generate" to view the report. Save the report definition by changing the name of the report and clicking "Save Definition". Save the "Dashboard" report to create a default report definition.



Report MyReport1

display all elements

with table format

and column names: 1. Name 2. Type
3. — 4. —

sort by Name ascending

Generate **Save Definition** **Printer Friendly Report...**

[...]SIFWorks ZIS
Depth: 0
Enterprise Count: 1
Name: SIFWorks ZIS
Path: /SIFWorks ZIS
Type: server

11. To generate and view the report, click the **Generate** button.
12. The report is displayed as defined
13. To save the definition, click the **Save Definition** button.

Note: A saved report definition does not save a snapshot of the values. Each time the report link is clicked, the report is generated from current statistics.

14. The report is displayed in the navigation pane, under the **Dashboard** link.



15. The Report page displays the name of the saved report ("MyReport1," in the example below).

Dashboard

Report

Set the report definition parameters and click "Generate" to view the report. Save the report definition by changing the name of the report and clicking "Save Definition". Save the "Dashboard" report to create a default report definition.

Report: MyReport1

Generate

Edit Definition

Delete

Printer Friendly Report...

| Name | Name | Type |
|--------------|--------------|--------|
| SIFWorks ZIS | SIFWorks ZIS | server |

16. To view or manage the report, take the following actions as necessary:
- To view the report again, click the **Generate** button.
 - To modify the report definition, click the **Edit Definition** button, which returns the report building page, allowing you to re-define elements, format, or sorting options.

- c. To delete the report, click the **Delete** button. A confirmation dialog is displayed:

- i. A confirmation dialog is displayed.



- ii. Click **OK** to delete the report.

- iii. The report is deleted, and removed from the navigation pane.

- d. To print or save the report, click the **Printer Friendly Report...** button.

- i. A browser is opened, displaying the report in printable format.

A screenshot of a Microsoft Internet Explorer browser window. The address bar shows the URL: http://est-qa1:7003/console/srv/srvController?vw=dashboard_report&report_name=MyReport1. The page has a title bar that says "Print...". Below the title bar is a table with three columns: "Name", "Name", and "Agent Count". The table contains 10 rows of data, each representing a zone and its agent count.

| Name | Name | Agent Count |
|---|--------|-------------|
| /SIFWorks ZIS/MyEnterprise/Zone01 | Zone01 | 5 |
| /SIFWorks ZIS/MyEnterprise/Zone02 | Zone02 | 5 |
| /SIFWorks ZIS/MyEnterprise/Zone03 | Zone03 | 5 |
| /SIFWorks ZIS/MyEnterprise/Zone04 | Zone04 | 5 |
| /SIFWorks ZIS/MyEnterprise/Zone05 | Zone05 | 5 |
| /SIFWorks ZIS/MyEnterprise/Zone06 | Zone06 | 5 |
| /SIFWorks ZIS/MyEnterprise/Zone07 | Zone07 | 5 |
| /SIFWorks ZIS/MyEnterprise/Zone08 | Zone08 | 5 |
| /SIFWorks ZIS/MyEnterprise/Zone09 | Zone09 | 5 |
| /SIFWorks ZIS/MyEnterprise/Zone10 | Zone10 | 5 |

Notifications

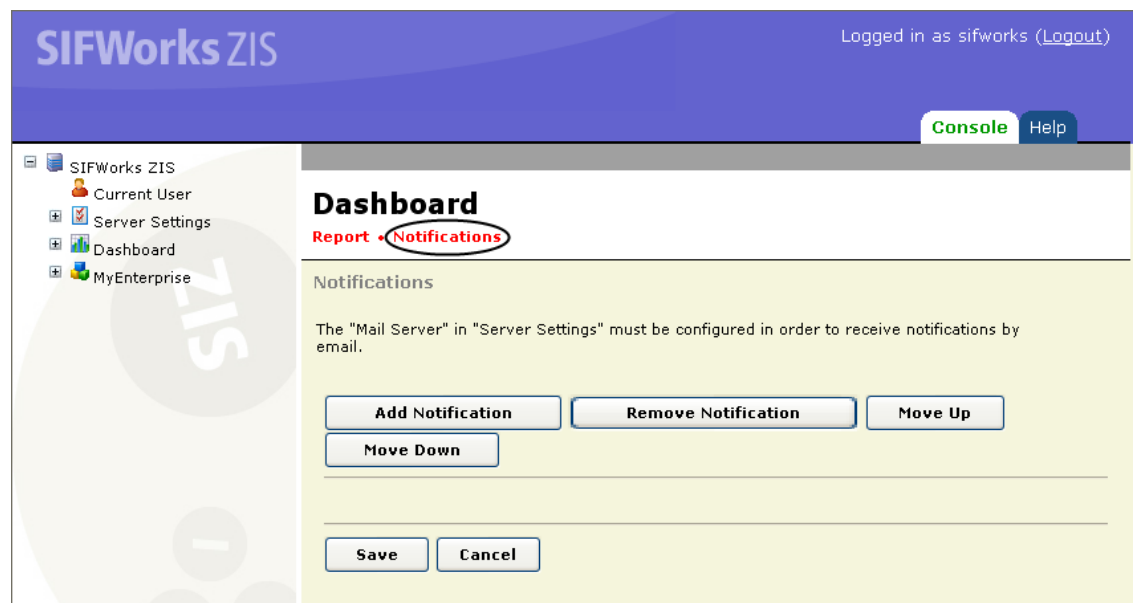
The Notifications feature of the Dashboard defines when to trigger an email notification based on one or more values tracked by the Dashboard.

Note: Mail Server settings must be configured before email notifications can be processed.

In order to process email notifications, the Server Settings > Mail Server Settings must be completed. Currently, email (SMTP) is the only delivery channel for notifications. After the Mail Server settings are saved, Notification rules may be created.

Accessing the Notifications Page

1. Open the ZIS.
2. Click on **Dashboard** in the navigation pane; by default, the Dashboard opens on the Report page.



3. Click on **Notifications**

4. The **Notifications** page is displayed.

Dashboard
Report • Notifications

Notifications

The "Mail Server" in "Server Settings" must be configured in order to receive notifications by email.

Adding a Notification

A Notification requires a name, one or more conditions, and an action that the ZIS will take to notify an administrator.

1. Open the ZIS.
2. Click on **Dashboard** in the navigation pane.
3. Click on **Notifications**; the Notifications page is displayed.

Dashboard
Report • Notifications

Notifications

The "Mail Server" in "Server Settings" must be configured in order to receive notifications by email.

4. Click on the **Add Notifications** button.
5. The Notifications page expands to display fields for defining a new Notification.

Dashboard

Report • Notifications

Notifications

The "Mail Server" in "Server Settings" must be configured in order to receive notifications by email.

Add Notification

Remove Notification

Move Up

Move Down

☐ ☐ New Notification 1

Perform actions when all conditions are true

Add Condition

Remove Condition

Add Action

Remove Action

Save

Cancel

6. In the first field, type the name of the Notification; in the following example, the Notification name is "New Notification 1."

☐ ☐ New Notification 1

7. Determine **when** the action will be performed by clicking on the drop-down list in the **Perform action when** field. (In the following example, **all conditions are true** is selected.)

Dashboard

Report • Notifications

Notifications

The "Mail Server" in "Server Settings" must be configured in order to receive notifications by email.

Add Notification

Remove Notification

Move Up

Move Down



New Notification 1

Perform actions when

- any condition is true
- all conditions are true**
- any condition is true
- all conditions are false

Add Condition



<Select Condition>

Add Action

Remove Action

Save

Cancel

8. **Add a condition** (“Queue Message Count is greater than...” or “Last Message Timestamp is greater than...”) about which the ZIS will send this notification. In the following example, the selected condition is “Queue Message Count is greater than...”

Dashboard

Report • Notifications

Notifications

The "Mail Server" in "Server Settings" must be configured in order to receive notifications by email.

☐

Perform actions when

☐

☐

9. When the Condition is selected, the Conditions section of the Notifications window automatically expands to include an additional field for entering a value. In the following example, a value of “10” has been entered, so that the condition is “Queue Message Count is greater than 10.”

☐

Perform actions when

☐

☐

10. Add another condition, or skip to the next step.
11. Add an action by clicking the **Add Action** button.
12. The Add Action section is expanded, displaying a drop-down list of actions—Log or Send Email. (The “Do Nothing” item in the drop-down list of actions is a placeholder, for use if you want to keep the definition of a notification, but need to temporarily “turn off” a notification.
13. Select an action from the list. In the following example, the “Send Email” action is selected.

Dashboard

Report • Notifications

Notifications

The "Mail Server" in "Server Settings" must be configured in order to receive notifications by email.

Add NotificationRemove NotificationMove UpMove Down

☐ New Notification 1

Perform actions when all conditions are true

Add ConditionRemove Condition

☐ Queue Message Count is greater than 10

Add ActionRemove Action

☐ Do Nothing
Do Nothing
Log
Send Email

SaveCancel

SIFWorks® ZIS™ Enterprise Administration Guide

107

14. When the action is selected, the Add Action section expands further, to include a field for entering a Log Message or Email information. In the following example, the **Send Email** action was selected, so the email information fields are displayed.

☐ New Notification 1

Perform actions when ☐ all conditions are true

☐ Queue Message Count is greater than 10

☐ Send Email

To: CS1@support.com

Subject: Message from ZIS

Report Name: New Notification 1

Email Text: Queue Message count is greater than 10

15. Enter the email information for this notification, and click the **Save** button.
16. The Dashboard returns the default report page.

Removing a Condition or Action from a Notification

To remove a condition or action from a saved notification, simply check the box beside the condition or action you wish to remove, and click the **Remove Condition** or **Remove Action** button. The deletion is immediate; you will not see a confirmation dialog.

Deleting a Notification

To delete a Notification:

1. Navigate to the Notification you wish to delete.
2. Click in the checkbox of the Notification you wish to delete.
3. Scroll to the top of the Notifications page, where the management buttons are located.
4. Click on the **Remove Notification** button.

5. A confirmation dialog is displayed.



6. Click **OK** to remove the selected notification.
7. The Notification is removed, and the Dashboard returns the default report page.

Moving a Notification in the List

The Notifications page displays all saved notifications, and the list may be managed for improved accessibility to selected notifications.

To move a Notification up or down on the list:

1. Navigate to the Notification you want to manage.
2. Click in the checkbox beside the Notification you want to manage.
3. Scroll to the top of the Notifications page, and click on the **Move Up** or **Move Down** button.
4. The Notification will be moved up or down on the list only one place at a time.

Node Path Notification Condition

The ZIS dashboard supports the ability to send email notifications under conditions specified by the user. One of the possible conditions is a rule called "Node Path Contains," which refers to the full pathname of a given node in the report.

About the "Node Path Contains" Rule

The "Node Path Contains" rule allows you to further restrict notifications to conditions that occur within specific agents, or agents in specific zones, or even enterprises. The term "Node Path" refers to the full path displayed in reports, in both list and table modes. The path consists of several components separated by forward slashes. The components are "SIFWorks ZIS" literally, followed by the enterprise name, zone name and, finally, the agent name. In table mode, you'll always see this node path as the first column.

The specified parameter in a Node Path Contains condition should be a substring of the complete node path (including delimiting slashes) contains. A very simple matching algorithm is applied to determine whether notification emails should

be sent or not. A recommendation for specifying enterprises, zones, or agents is to use the complete path up to the point of the desired container level, including all slashes; however, another matching scenario may be that you want all notifications for a given agent ID, in which case you will probably have the most success using a single slash followed by the agent ID of interest. Some examples follow.

Examples

- If you had a zone named School15 in an enterprise called MyEnterprise, and you wished to **receive notifications for all of the agents in that zone**, you would use this new rule with a parameter of `"/SIFWorks ZIS/MyEnterprise/School15/"` and that would match against all agents in that specific zone.
- **To monitor only one specific agent in that zone**, you would go one step further, appending the agent ID at the end as `"/SIFWorks ZIS/MyEnterprise/School15/SISAgent"` just as it appears in the generated reports. In fact, viewing the generated reports in table mode is the best reference for what your node paths look like.
- Finally, to monitor one **agent common to many zones**, perhaps a PowerSchool agent with "PowerSchool" as the agent ID, the best matching strategy would be a parameter of `"/PowerSchool"` which would match the end of all agent nodes with the "PowerSchool" ID.

23. Maintaining the ZIS

Routine or Ongoing Tasks

Log Files

Check that log files are not consuming too much disk space.

To remove log files, first stop the ZIS, and then remove all files in the “logs” directory.

Agent Queues

Check that messages are not being held in agent queues. Message filters may hold a message in an agent’s queue. A message that fails a workflow transform will be held in the agent’s queue with the relevant error message.

Part XI

TROUBLESHOOTING

24. Basic Troubleshooting

Most of the time, a SIFWorks ZIS installation "just works," but occasionally you may run into issues with data and connectivity. This chapter shows some of the techniques for troubleshooting a SIFWorks ZIS-based zone, including the use of SIFWorks ZIS tools.

Basic Connectivity

Some of the most common problems occur when communications between the ZIS and one or more agents are completely disrupted. Initial troubleshooting should include the following, at both the SIFWorks ZIS machine and any separate machine running an agent:

Check all cables--power, network, serial, mouse, and keyboard. Intermittent or interrupted communications on any of the basic system cables can cause errors or complete interruptions in service

If a machine has consistent problems with multiple agents, check with your operating system vendor and go through their usual diagnostic procedures.

Connection Problems

Connection problems occur when the physical network is properly connected but some software or configuration issue prevents all communications between SIFWorks ZIS and the agent.

Common Causes

Agent configured with incorrect server IP address or port number.

SIFWorks ZIS is not running.

SIFWorks ZIS is not listening for messages on the port number or protocol specified by the agent.

Agent prevented from accessing SIFWorks ZIS because a firewall is blocking access to the port.

Agent is misconfigured to send messages to SIFWorks ZIS using one protocol (e.g. HTTP) but to receive messages using another protocol (e.g. HTTPS).

Common Resolutions

Double-check IP address, port, Zone ID and URL specified in the agent configuration.

Double-check that SIFWorks ZIS and the agent(s) are running.

Check communications. If you are having trouble with an agent that runs in Push mode, then from a command line window ("DOS box", Terminal, xterm, etc.) on the ZIS machine, use the ping command and try to "ping" the agent machine, as well as other machines that you know should be "pingable" from the ZIS machine. If you are having trouble with an agent that runs in Pull mode, then go to the machine running that agent and try to "ping" the ZIS machine. If a firewall is blocking access to SIFWorks ZIS, create an HTTP transport instance for port 80 or an HTTPS transport instance for port 443 (the defaults are 7080 and 7443). Ensure those ports are not already in use by IIS or other web server software installed on the same computer.

Push Problems

The "Push" mode of communications has some unique configuration issues that need to be addressed.

Common Causes

The agent registered an IP address, port, or URL in its SIF_Register message that is invalid.

The agent is not running.

The agent is running but wasn't able to establish a local port to listen for messages.

There is a firewall in the way preventing SIFWorks ZIS from sending messages to the agent.

The Push Settings in SIFWorks ZIS are configured with a very long retry setting, so messages appear to be accumulating in the queue, but really SIFWorks ZIS hasn't yet attempted to deliver them.

Common Resolutions

Check the SIFWorks ZIS log file to determine the result of the last push attempt. (You'll see a message such as "Connection refused" if SIFWorks ZIS is unable to establish a connection with the agent.)

Double-check the agent configuration.

Make sure you haven't used "localhost" as the agent's address; from the perspective of SIFWorks ZIS, "localhost" is not the address of the agent!

Check the agent log files to determine why it cannot establish a socket to listen for messages from the ZIS.

No SIF Activity

Consult this section when all communications appear to be correct by the diagnostics in the previous sections but SIF data is not flowing through the queues.

Common Causes

The agent does not have the necessary Access Control permissions to send or receive messages.

The agent may simply be taking a long time to process a very large message
SIF Version incompatibility. For example, you initiate a synchronization from an agent registered to use SIF 1.1, but the provider of data in the zone is registered to use SIF 1.0r1 and therefore never receives the message or cannot interpret it.

The communications channel between SIFWorks ZIS and the SIF Agent does not meet the minimum authentication and encryption levels specified by the sending agent.

Event Reporting is turned off or is not functioning properly in the SIF Agent (may also indicate a problem outside of SIF).

XML Validation is failing for messages sent by one or more SIF Agents.

The agent has a defect (SIF is a complicated system and agent software is still relatively immature).

Common Resolutions

First, check the SIFWorks ZIS logs.

Secondly, check the agent logs.

If connectivity between SIFWorks ZIS and SIF Agents is working properly, problems with SIF activity should be easily identifiable by inspecting the SIF_Ack messages in the logs.

Double-check the agent's Access Control permissions.

Double-check the agent's minimum encryption and authentication levels.

Double-check the SIF Version that each agent has registered with by visiting the Provisioning page in the SIFWorks ZIS Console. Agents do not necessarily need to be using the same version, but the complexities of multiple versions in one zone have not been fully addressed by SIF yet.

Using Queues in Troubleshooting

You can use the Queue options to halt responses or halt all activity from an agent to aid in troubleshooting. Examining a message while it is in the Queue can shed light on the communications; you can then decide whether or not to let the message go through. You can even delete messages from the Queue before delivery, thus preventing them from ever being delivered, if necessary.

Part XII

EDUSTRUCTURES SUPPORT

25. Contact Information

Support for SIFWorks ZIS 3.2

Our well-qualified support team is available to help get the Edustructures SIFWorks ZIS configured and running correctly, provided that a current support contract is in place.

Telephone Support

Customers can reach Technical Support at 1-877-790-1261 during our regular business hours from 7:00 AM (07:00) to 6:00 PM (18:00) Mountain Standard Time. Such support will include technical assistance of product installation, technical configuration of the installed components, technical issue resolution, and reporting of bugs and enhancement requests. If support is required outside of these hours, it may be arranged through the Director of Implementation Services.

On-Line Customer Support Center

Customers with an active Support Agreement are eligible to access the Customer Support Center at www.edustructures.com/support to view or log issues, and to access the Edustructures knowledge base. A Customer Support representative can grant access to a customer by activating "self-service" on the contact screen in Salesforce.

Remote Access

Customer Support is accomplished primarily via telephone and/or remote access. For remote access, Edustructures uses GoToMeeting, WebEx, and VPN technology to visually inspect and access a customer's server environment.

On-Site Support Service

Customer Support Services may be requested for product installation or other support reasons. If on-site support is requested, it may be arranged through the Director of Implementation Services.